An economic enquiry into the welfare effects of fair-trade

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Declaration of Authorship

I, Steven Telford certify that the thesis entitled 'An economic enquiry into the welfare effects of fair-trade' for examination for the Degree of PhD of the University of London (Queen Mary College) is solely my own work other than where I have clearly indicated that it is joint work with others. Where I have quoted from the work of others, the source is always given. I declare that this authorisation does not, to the best of my knowledge, infringe the rights of any third party.

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Steven Telford

Abstract

Fair-trade is investigated at three levels. Each level relates to a specific group of actors. The first group are the consumers of fair-trade. In this respect fair-trade overlaps with altruism. A model is developed which seeks out parameters by which to judge whether or not a person will engage into this gesture of altruism, and accordingly measures the fair-trade utility of the consumer. On the basis that it is voluntary, fair-trade is deemed to be virtuous in that it either uplifts consumer utility, or else the consumer withdraws their patronage. Information is hypothesised to play a key role in determining the depth of this relationship.

The second group are neighbouring producers, that is the non fair-trade producers who compete in the same market. A situation is modelled in which fair-trade is viewed as a switch in demand preference rather than new demand. The model allows an evaluation based on the standard tenets of welfare economics: to inform upon which movements are value-creating, which are merely transfers, the symmetry of those transfers and where Pareto improvements can and cannot be realised. The policymaker is afforded a logical overview, but with the implication that many of the relevant variables may be lie beyond their direct influence.

The third group are landless vineyard labours in South Africa who are empirically analysised. We observed the strongest performance of fair-trade with respect to subjective improvement in wellbeing and the sort of participation that could be categorised as empowerment.

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List of Abbreviations

ANOVA	Analysis of Variance Approach
ARP	Average Revenue Product
ATO	Alternative Trade Organisation
CDF	Cumulative Distribution Function
CAP	Common Agricultural Policy
ESS	Evolutionary Stable Strategy
FT	Fair-trade
FLO	Fairtrade Labelling Organisation (now known as Fairtrade International)
GEA	General Equilibrium Analysis
GM	Genetically Modified
HDI	United Nations Human Development Index
ICAFE	Instituto de Cafe de Costa Rica
IOF	Investor-Owned Firms
IP	Intellectual Property Rights
ILO	International Labour Organisation
MC	Marginal Cost
MFX	Marginal Effects
MRP	Marginal Revenue Product
NPOM	Near Perfect Occupational Match
NEIO	New Empirical Industrial Organisation
OPM	Oxford Policy Management
POM	Perfect Occupational Match
PSI	Perfect Subgroup Identification
PSH	Prebisch-Singer Hypothesis
PSM	Propensity Score Matching
ROC	Receiver Operating Characteristic
SDA	Self-interest Disguised as Altruism
SOE	State-Owned Enterprise
SRAS	Short Run Aggregate Supply
UN	United Nations
UIF	Unemployment Insurance Fund
VMP	Value of Marginal Product
ZOM	Zero Occupational Match

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General Introduction

Apparently trade has little in common with love and war.

The primary subject matter of this thesis is fairness in trade and in particular what Western consumers have come to recognise as being the 'fair-trade' movement.

As will be brought into focus by the identifications of the literature review (Chapter I), the primary intention of this discourse is to consider the welfare effects that fair-trade has on each of the actors involved. While the majority of studies centre on the participating producers, this dissertation attempts a rounded understanding of fair-trade by separately partitioning two additional groups of actors. These are the fair-trade consumers themselves (voluntary-based benefactors), and the neighbouring non-participating producers (non fair-trade producers who compete in the same market).

Following the literature review, each chapter is dedicated to a particular group. Adopting an approach from behavioural economics, Chapter II considers those on the consumption side of the relationship; it designates fair-trade to be a form of altruism, and theoretically investigates why the fair-trade consumer exists. Chapter III assumes the stance of a classical welfare approach and, under the consideration that demand is limited and extra supply unwarranted, simulates the various reshuffles of welfare that can take place between participating and non-participating producers. In essence this chapter begs the question, 'what might fair-trade mean for the incomes of producers who are absent from the fold'? Penultimate to rounding off the thesis as a whole, Chapter IV returns the feet of this thesis to the grassroots by providing an empirical case study of grape pickers (fair-trade wine) in South Africa.

This dissertation does not comment on the origins of so-called ethical consumption. Nor is it the intention of this prologue to acquaint the reader too intimately with the legal and bureaucratic specifics of the fair-trade movement. What the opening section of this thesis does is to pick up fair-trade from the point at which the movement dropped

its hostility to the market (mid to late 1990s). The aim is to deliver a practical outline of what fair-trade is, the logistics of the movement, and the generalised standards under which it operates. This general introduction will round off with an expression of how this thesis opts to comprehend the concept of fairness. This is designed to whet the appetites of critics who pose the opinion that the economic mode of enquiry offers little time for fairness, and that proponents of market driven allocation have lost their way regarding a comprehension of what 'fairness' is. At the very least, this general introduction should communicate an understanding of the chosen frameworks of subsequent chapters.

It is appropriate to proceed with an 'in-house' definition:

Fair Trade is a trading partnership, based on dialogue, transparency and respect, that seeks greater equity in international trade. It contributes to sustainable development by offering better trading conditions to, and securing the rights of, marginalised producers and workers – especially in the South. Fair Trade Organisations (backed by consumers) are actively engaged in supporting producers, in awareness raising and in campaigning for changes in the rules and practices of conventional international trade.

FINE[1], October 2001.

While the above text is touted as a definition, it may be argued that the statement amounts to more of a guiding principle, a constitution of sorts; as in regard to the realities on the ground it undeniably leaves much to the reader's imagination. The specifics of various fair-trade agreements are often generalised to be inclusive of such definitional conditions as: a minimum price that is inclusive of a 'social premium[2]' the level of which guaranteed to be above the market price, partial payment in advance if

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[1] FLO IFAT NEWS……FINE is an acronym for main certifiers (regulators) of the movement.

[2] A social premium is a set amount of money that the cooperative appropriates and is supposed to put to use for investments from which all member may benefit, e.g. a health clinic.

requested, and the signing of contracts sufficient in length to afford the producers a predictable horizon of income.

There is nothing overly misleading about the above definitional inventory, it states the rules of the game in what may be described as an 'accurate enough' package. However it's necessary to be aware that there are occasional pragmatic departures from what one may typically regard as the usual suspects of fair-trade, for example, *"Where minimum prices are not defined these must be based on covering production costs as defined by the producer"* (OPM 2000, p.6). The fact that some products lack minimum prices provides an illustration of one such twist of convention. Hence emerges the reasoning as to why the fair-trade movement is forced to employ so broad a definition as its principal charter. In response to ambiguities that manifest themselves at the operational level, the general and practical definition of fair-trade that this discourse will adopt may be termed simply as: *Fair-trade is a privileged trade agreement whereby producers and or labourers receive a degree of insulation from market forces and alleged market failures*.

Strictly speaking, one might reserve 'fairtrade' (as a single term) for discussions that relate to 'the FLO[3] certified movement'. Indeed, as far as the eye of the consumer is concerned, FLO umbrella certification likely constitutes nine tenths of the concept. Nevertheless, there do exist various other uncertified initiatives that are capable of posing a similar moral boast. Therefore, the more candid definition that this discourse is employing serves not only to iron out the creases from the FINE definition, but also to actively accommodate a number of quieter and less visible endeavours of a similar flavour. For the sake of consistency and inclusiveness, this discussion will stick with 'fair-trade' (as a hyphenated term) throughout. More refined detail will be offered in appropriate sequence, for now it is enough to merely be aware that the generic standards

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[3] FLO has recently changed its name to 'fairtrade International" for this thesis we are sticking with FLO

are not quite as watertight as one might expect, and that the concept as a whole is at times present in commodities which are not certified (see Berlan 2006, and Mohan 2010).

Prior to further elaborating on the problems of a definition, it is worthwhile taking a step back in order to consider the geography, commodities, size and growth of the movement. Appendices 0.1, 0.2 and 0.3 offer a picturesque outline of the countries and commodities with which FLO-certified fair-trade is predominantly associated. In terms of volume and visibility, coffee has traditionally been the poster child of the fair-trade movement, but in regards of retail value bananas have now in some markets knocked it from its top spot, and other commodities continue to rise. As a whole, fair-trade is estimated to account for only 0.01% of global agricultural trade (Riedel, *et al*. 2005). Needless to say the markets for final consumption are those with affluent enough incomes to be able to support it. The Fair Trade Federation (2010) estimates that total global sales of fair-trade products in 2009 amounted to €3.4bn, a 15% overall increase on the previous year. In 2009 North American sales amounted to €1.053bn, a 20% increase on the year before. Sales in 2009 to Pacific Rim countries amounted to €29m, a 55% increase compared to 2008. Europe stands out as being particularly receptive to the message of the movement. Appendix 0.4 depicts the market share of coffee across selected countries, and Appendix 0.5 displays more recent retail volumes and year on year growth in global sales. Whilst there is always a lag, the length of which we do not yet know, it is interesting to observe that the financial crisis did not appear to coincide with a dent in the value of the fair-trade market. 2008-2009 did however reside over a fall in the rate of growth, albeit still an impressive one, down from 43% in the previous period to 15%. Appendices 0.6 and 0.7 trace the growth of fair-trade in the UK market, in which total sales in 2009 are estimated to have been between £799m to 836m, and to have thereafter breached the billion pound mark in 2010. As estimates sometimes have

to be revised, the researcher may find slight discrepancies between various FLO annual reports, which are the sources of the numbers being reported here.

In a further engagement of the FINE definition, one could assert that it is a touch myopic to view this problem of fairness in trade as being a North–South issue as opposed to it being a more deeply entrenched rural–urban phenomenon. Indeed, as a prelude to the developmental writings that shall later be brought into focus, one is well equipped to argue that relative agricultural ache is more a sign of progress than illness. Admittedly, that must surely be of little comfort to those who are forced to bear the burden of structural disruption and/or structural entrenchment. The inter-temporal, or to be more precise, the intergenerational trade-offs that fair-trade may potentially give rise to makes for an absorbing avenue of discussion. While one must maintain respect for paths well worn and lessons that seem largely inevitable, at the same time one must not be too eager to be taken hostage by the view that not even the edges can be smoothed to assist those whom development might otherwise devour. Relevant as it is, the potential for a 'developmental critique' of fair-trade shall only occasionally be touched upon in this thesis, thus it will not be featuring as a central element.

Continuing to take issue with the FINE definition, one may raise an eyebrow in respect to the claims of transparency and sustainable development. From the view of the consumer who is likely to have only the packaging in front of them, there is no explicit reason to consider that fair-trade is any more or less transparent than a conventionally traded good. What is made public outside of the packaging may well surpass that of many conventional equivalents; however, given the search costs involved, transparency in itself can be a trait that is difficult to qualify. In one sense something can be declared to be transparent if everything that relates to it is freely available. But in another sense, if that which constitutes 'everything' amounts to an unassailable amount of testament,

then the claim to transparency shrinks in practical meaning. The 'Fair Tracing project'[4] potentially offers an impressive and innovative solution to this part of this quandary. What it does not completely solve is the wider issue of consumer faith in the enforcement of standards mechanism. Given that the number of inspectors is listed to be 120 (FLO-CERT), one may be forgiven for harbouring a touch of scepticism regarding the ability of labelling organisations to effectively monitor conditions on the ground; the relationship with the consumer does in effect end up defaulting to be one of 'trust'. Brittle as trust characteristically is, in devising a solution to the problem of bolstering it, those responsible would be well advised to show ample sensitivity to the truth that it is far easier to regulate something to death than it is to regulate it efficiently and effectively. Indeed, given that 'inspection' and 'final price' are likely to be positively related, one must express sympathy with the difficulty of the task at hand.

In respect to the FINE statement of sustainability, one may legitimately ask, *sustainable relative to what*? In addition, some may argue that FLO's hostility to GM crops starkly contradicts its stated aim of sustainability (Haight and Henderson 2010). More troublesome still becomes the claim of sustainability when coupled with the oft touted accusation of oversupply. As yet, oversupply should neither be taken for granted nor lifelessly dismissed; the prospect of, and related issues thereabout, shall respectively be addressed in Chapters I and III.

A parallel matter of suitability relates to the encouragement that the movement extends to farmers in having them embrace organic methods of production. Attempting to pair fair-trade with organic production plays well to the likely privilege of the final consumer, and in addition 'organic' adds weight to what *might* be deemed to be real economic value to the product. It is however, as yet, an unsettled debate as to whether

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[4] http://web4.cs.ucl.ac.uk/staff/C.Wallenta/fairtracingblog/ A program being developed by which a consumer will be able to input a barcode and trace the organs of their purchases by way of website and mobile phone.

organic production is any more sustainable than non-organic methods. Synthesised chemicals are of course absent by definition, but the negative trade-off is said to be felt in a reduction in yields per hectare; by which note, serious questions of suitability may legitimately be raised (Economist 2006). Possibly the best counter to the questioning of sustainability relates to the social premium being employed in a manner that teaches sustainable methods of production to farmers – this does indeed at times take place. Yet, whatever techniques may be taught, theory and practice appear to suggest that 'secure property rights' in themselves are the greatest foe that the tragedy of the commons has ever faced, and as such represent the one of the finest friends that 'sustainability' could ever wish for.

Important to how this general introduction is to be rounded off, Moore (2004) makes us privy to the fact that movement insiders readily acknowledge the definitional problem that surrounds 'fairness'. Strange as it may sound, this admission of Moore's carries an air of comfort for the welfare economist; for had the claim been otherwise, the credibility of the movement would be philosophically and analytically damaged. Testament to its cornerstones being a number of 'impossibility theorems' and its strongest micro judgement, that of Pareto, being essentially value judgment, it is a well established fact that welfare economics is an analytically incomplete charter (see Ng 2004). Philosophically, the door is more ajar.

When addressing fairness, it is effortless to get caught up in the romance of elegant and enchanting mantras such as, "*from each according to his ability, to each according to his need(s)*". Indeed, if a person is never once in their lifetime inspired by optimistic undertones such as those, then it is to the coroner they should arguably have been sent. Yet history beckons the old Chinese proverb to mind, '*be careful what you wish for…*' and few laws boast the potency of the '*law of unintended consequences*'. For the reason that judgements are always ongoing, one may never speak with precise accuracy of the

legacy of historical action. It's not over until it's over, and so judgment is a largely a continuous process. And if the road to hell can be paved with the finest of intentions, than so too feasibly can the road to heaven be paved with the worst of intentions. Speaking to date, there is an unfortunate irony in recognising that extreme egalitarian adventures appear to have damaged the very people that they were designated to be vanguard of. And, while it is wholly true to say that he who cannot envision something better for the world is a person of meagre mind or crippled heart, it is equally factual to assert that she who seeks to navigate the seas of human incentives will make precious little headway if she chooses to deny the existence of the selfish tides and egotistical winds. Of precious little use are the finest silk sails if no wind is permitted to fill them.

There will always be the tendency to look back with the feeling that we can learn from past mistakes and craft something better for the future. This is a sentiment both noble and essential to the evolution of our species, yet in respect to doctrines of extreme fairness, it is not so much the past but rather 'the self' into which one must peer. At the microeconomic level, fairness from the perspective of the individual is a social judgement that embodies the beliefs, preferences and values of a particular population at a particular period in time. The problem of defining what is essentially a 'social judgement/perception' runs aground when confronted with the fact that, if these perceptions and judgements change, then so may that which gets designated fair or unfair. We are potentially faced with trying to define an inconsistent entity. A view such as this receives strong empirical support from Kahneman *et al*. (1986a, 1986b), the results of which clearly indicate that people harbour deep inconsistencies in their declarations as to what they perceive constitutes fairness. Similarly, Thaler (1985) clearly demonstrates that the same individual will routinely employ different 'fair' prices for an identical good.

When it comes to resolving the tensions which reside between micro behaviour and macro application, and therein attempting to soothe the precarious rift between 'equity and efficiency', few harbour the intellectual craftsmanship of the late John Rawls. Through his *veil of ignorance* exercise, Rawls crafts a definition of fairness in which, quite simply, one is only permitted to designate a particular outcome to be fair, only if one is willing to accept it for oneself (1971 p118). Described more intimately by Rawls, the beauty of his idea is to be found in its simplicity; it's almost humorous to have inaugurated a complex search for something so apparent. Blushes are however spared by the truth that philosophical brilliance and tractability seldom converge. The proposal suffers from the issues relating to imperfect information, something I think can agreeably be referred to as a failing of a 'no Marie Antoinettes' assumption. In addition, non-universal tendencies of risk also pollute the idea. Yet, irrespective of flaws in practical application, it is imperative to have something to gravitate towards, and Rawls provides just that. To capture it simply, eradication of the sort of lifestyles and livelihoods that one would deem unacceptable for oneself is a truly dignified way to assign both definition and purpose in the tying together of justice and development. From this he of course crafts the famous Rawlsian base, above which inequalities are tolerated in the name of liberty and efficiency, but below which nobody should be permitted to fall. As we will see in the literature review, fair-trade may not necessarily be targeting the most severe levels of poverty, but in attempting to use market forces to fortify a progressive base for a sufficiently disadvantaged group, it can be seen as being harmonious with a Rawlsian distinction of fairness. It is for its compatibility with 'Rawlsian fairness' that this thesis in principle believes fair-trade has the potential to be deserving of its prefix. For its own part this thesis believes the concept of fairness can be seen to reside within a paradox: one may not be able put a price on justice (at least it is outwardly honourable to think so), yet at the same time it is entirely wrong to suggest

that one cannot equate a cost to justice. It is somewhere within that paradox that the obscure concept of fairness hides, and it is the solution to that inconsistency which punctuates the approach that this thesis adopts in its efforts to evaluate fair-trade. This thesis will not lay claim to answering in all purity the question as to whether or not fair-trade is actually fair. Rather, the objective is to progress the debate so as to facilitate a better understanding of whether or not, and by what magnitude, a situation of fair-trade may or may not be preferable to a more conventional state of affairs. The retort by which we shall subsequently attempt to tame the paradox above can be stated as simply as so: if the costs of justice are inaptly high in terms of welfare, then that alone will be sufficient to facilitate the conclusion that justice is unbecoming of its name. Quite simply, fairness is what fairness does.

Chapter I: Literature Review

1.1 INTRODUCTION

The literature that *directly* confronts fair-trade can be divided up into the following five classifications: informative, sociological, statistical case studies, econometric evaluations and theoretical economics. This literature review places them under three headings. The first three classes are grouped together and discussed under the heading 'Case studies I'. Subsequently, in accordance with the importance we attributed to *ceteris paribus* and statistical significance, the few econometric analyses that have surfaced are reviewed separately under the heading 'Case studies II'. Before rounding up with some conclusive remarks, cordoned under their own heading, the theoretical economic perspectives constitute the penultimate section of this chapter. The theoretical economic literature is somewhat different from the other entries in that it opens the door to a much broader base of literature – agricultural economics, welfare economics, trade economics, development economics – the pool of which potentially widens to become an ocean of interrelated paradigms, and so there is a need to be selective. I will look at 'the frameworks' which certain economists have chosen to apply directly to the context of fair-trade.

In terms of who argues for what, two avenues of engagement may respectively be sighted. The first is a position of *contentment at corrective intervention*, and the call that fair-trade is legitimised by the presence of market failures and other interferences. Secondly, and alternatively, there is the perspective of *dissatisfaction at the addition of 'yet another' inefficient market distortion*. It is generally those who favour the vantage point of the former who choose to offer fair-trade the energies of their thoughts and writings. But let this not skew the overall picture because, if one wishes to seek out economic literature that sings from the hymn sheet of minimised intervention, then

obviously the writings that are available are more than plentiful. The philosophical gravitas of which, one may perceive, emanates from the liberal tradition that was set forth by 'the wealth of nations' – the formal offshoot being the eminently named 'first fundamental theorem of welfare economics'. Hence, some may feel that if fair-trade is viewed as an intervention, modern economics is somehow principle-bound to disown it. Such a view is simplistic as it is erroneous to cite that if a person offers support to fair-trade, they by default disown an allegiance to free trade. Only if all other impediments to free-trade were lifted, could one begin to see the debate in that bilateral light.

Wishing to accommodate a sufficiently generous interpretation of what constitutes *impact*, this chapter has made an effort to be as inclusive as possible. While my preference is for hardened empirics, multidisciplinary respect is woven within and so various papers that dwell on sociological sentiments of empowerment have been included. The conclusive remarks that herald the end of this chapter clarify the gaps in the literature, and in doing so enforce the logic and sequence of the remainder of this thesis.

1.2 CASE STUDIES I

Taking coffee as its subject matter, Lindsey (2004: 9) accuses the fair-trade movement of "*economic illiteracy*", an assault very much orientated towards dissatisfaction at the addition of another price distortion on trade. Despite being critical of agricultural tariffs and subsidies on the Western side, Lindsey does not appear to have considered the role of fair-trade as a partial counter balance to such actions – only that both of those interventions are unwelcome. A valid point is put across in relation to the differing technical capabilities that exist between countries; an example of such being, "*In some areas of Guatemala, it could take over 1,000 people working one day each to fill the*

equivalent of one container of 275 bags.....whereas......in the Brazilian Cerrado, you need five people and a mechanical harvester for two or three days to fill a container" (Lindsey 2004: 4). Moreover, in terms of aggregate welfare, it is noted that jobs that have been lost in some parts of Central America have apparently been matched by job creation within the Vietnamese coffee industry. As well, while much of the literature seems to take for granted the demand side, Lindsey communicates the germane information that US per capita consumption of coffee has fallen from 36 gallons a year to 17 gallons between 1970 and 2000. Furthermore, it is imperative to recognise not just that prices have fallen, but equally the reasoning behind why price contractions have not been transmitted to Western markets. This is because the price of the bean itself constitutes a paltry 5-7% of the price of the product. The article culminates in two crudely categorical prescriptions: cut back supply, or boost demand.

In a similar vein, Sidwell (2008) takes gripe with the fair-trade movement over a number of related issues. His criticisms centre on certain 'value chain facts' and monitoring problems. The undercurrent of the argument is that of the superiority of free trade. The calls for free trade are endearing to most economists, however, touting the benefits of free trade is one thing, but having the WTO sail out of the democratic doldrums of agricultural stubbornness is another matter altogether. If one plays devil's advocate, great care must be taken before making a blandly theoretical assault on protectionism. Firstly there is the practical failure of analytical assumptions to consider, and while economic theory tends to praise universal abandonment, economic history – arguably a better host of the various dimensions of protectionism – informs us that certain taints of protectionism have indeed decorated the well trodden paths of many a now wealthy nation (Chang 2002). The message being touted here is by no means one of general support for protectionism, merely that protectionism comes in many shapes and sizes, and that the reader need consider both history and theory.

Of more immediate concern for the fair-trade movement should be the claim that a mere 10% of the premium ends up in the hands of the producers (Sidwell 2008: 28.). Even advocates state the percentage as at times being only 25% (Nicholls and Opal 2005). Of much less concern should be the allegations that four fifths of certified fair-trade produce ends up being sold in conventional markets, and that by being so concentrated in middle income countries, fair-trade fails to help the poorest of the poor. Given that Sidwell (2008) suggests that the gains of fair-trade farmers are generated at the direct expense of non-participating farmers, having four-fifths sold conventionally may be more of a virtue than a vice. The reasoning is two-fold. Firstly, if producers receive orders for relatively small proportions, and the role of the conventional markets permits a vent for surplus, then the spread of orders could feasibly be wider and in turn limit the damage to those who miss out. Chapter III of this discourse will formally show how this is possible.

Secondly the argument that producers become dependent on the charitable whims of Western consumers is also diluted if orders are relatively small in proportion to overall production. As for the criticism that fair-trade fails to help the poorest of the poor, by the same means one could criticise any charitable cause that helps 'anybody' other than the world's worst off. How about the charity 'Cancer Research' should its patrons disown it because wealthy people are perhaps more likely to be beneficiaries? Of course not, it need simply be accepted that different causes give assistance to dissimilar groups of people. As such, it is surely overly harsh to criticise fair-trade for the reasons that it aids the second or third worst off as opposed to the most worst off.

A fine point is made by the proclamation that, "*No country has ever become rich while remaining agrarian*" (Sidwell 2008: 14). In defence of that statement, economic history speaks with clarity. Two cornerstones of development economics which subscribe to the view that agriculture shall always play second fiddle to industry, are the

Prebisch-Singer hypothesis (1950) (PSH hereafter) and the Lewis model (1954). The PSH is the statement of the developmental trend by which we may expect to observe declining terms of trade for primary commodities. In the context of this dissertation as a whole, there is more to tap from the PSH than there is from Lewis. Hence, proper discussion of its influence shall be reserved for Chapter III, so as to present it in a more appropriate setting. What must however be said as a prelude to what will be addressed in chapter III, is that the discussion intends to go further than citing various elasticities as the cause of the declining terms of trade, and so heavily dispute the suggestion that these declining terms of trade are indicative of a North–South divide.

The Lewis model (1954), which can be pitched alongside the PSH, preaches the virtues of a free lunch of labour on which an industrialising city may feast to grow. Labour displaced by productivity gains, migrates and thus facilitates a more competitive manufacturing wage, the national reward for which is industrial development, and labour's share comes by the way of a relatively higher real marginal product. This path of migration appears to have stood the test of time. However, what is on offer has tended to be a debate over speed rather than sequence – at times a bitter debate. The existing literature furnishes nothing to the resemblance of a concrete conclusion.

There is a danger that if fair-trade were sufficiently strong it might retard the process of urbanisation that the Lewis model describes. It terms of efficiency and an implicitly proposed 'race to growth' one may possibly look upon fair-trade as potentially disastrous. This is the view that Collier (2008: 163) hints at. Alternatively, if fair-trade is not potent enough to pervert the call of the industrial wage, which given the connection between the price of food and the industrial wage it may never be, fair-trade might harmlessly afford a more pleasant existence for an unfortunate generation of producers. Or perhaps, if capabilities are strengthened prior to migration, such might at a later stage hasten a national ascent up the industrial value chain, or even stake a claim

in the lucrative and footloose service sector, as India appears to be in the process of doing.

What is being peddled here is not certainty per se, but merely the suggestion that it may be overly crude to consider this as *just* a matter of spiking the flow of labour so as to have it rush elsewhere. It is also a question of the ability of a sector and city to absorb and make productive use of the labour that migrates. While a squeeze must likely be tolerated, if things go well history suggests it shall be the descendants of those who abide that squeeze who end up endowed with the luxury of later distancing themselves from having the stomach to endure the same discomfort that the builders of their nation endured for them. The question of how the generational burden of development should be shared is an incredibly complex one that straddles an overlap between a number of economic sub-disciplines and moral philosophy. Writing from the perspective of a Western person in this day and age, I, by default, write from the vantage point of a person who has already had somebody else carry the burden of industrialisation of which I am a beneficiary. Would I – would you the reader – be willing to make the same historical sacrifice? A bedtime reading of Dickens is enough to convince me of my own reluctance. The required authority of anyone to demand generational sacrifices from anyone else is morally amiss.

When it comes to development economics, the most difficult issue with which to grapple is the alteration of landscape that is generated by the arrival of structural change and industrial newcomers: global growth, shifts in relative wealth, fresh challenges, different opportunities, and new lessons to be heeded. The world as a whole becomes essentially different from what it was. Therefore, ultimately, the desire to quote something with the clarity of a 'road map' is a yearning that will remain largely unsatisfied. Simply, *you can't have a road map for roads which are yet be built*; and so pragmatism on the part of interpreter and the policy maker will forever be requisites of

good judgement. Taking for example Amsdens's (1989) tri-classification of industrial revolution, "invention, innovation and imitation", here resides the implicit suggestion that we can, from our comprehension of past progress, trust *in isolation* neither the econometrician nor the economic historian. Each is needed so as to make up for shortcomings of the other. Moreover, an apparent progression to 'servicisation' adds further to the uncertainty of the waters in which we wade. Ultimately, this 'destiny of agriculture' perspective is one that taps into a wider and more cryptic developmental debate – *"the owl of Minerva takes flight only at dusk"* (Hegel 1900).

While the suggestive relationship between fair-trade and development is something that this discourse could not rightly let pass without comment, no bold attempt shall be undertaken to settle it. Simply, it is hoped that the reader will actively appreciate the abundance of possibilities that exists, and therein be mindful of false prophets who claim to see such great distances ahead.

To summarise, there is no doubt that a national fixation on agriculture at the expense of industry marks squarely the boundaries of a garden of serfdom – the road to which may indeed be paved with the best of intentions. In the absence of reliable time series data, we are largely reduced to guided conjecture. The conjecture of this discourse is that, while fair-trade does have the potential to adversely affect incentives to the detriment of industry, a meaningful distortion is unlikely to occur at its current market share. However if the movement continues to gather pace, it may begin to approach a level at which it's time to revalue that intuition.

Returning our focus to more immediate matters of impact, the Fairtrade Labelling Organisation (FLO) and its associated national initiatives have produced a number of their own impact studies, and their own review of other people's studies (See Nelson and Pound 2010). Unfortunately those papers are often characterised by a distinct lack of robust counterfactual comparisons. This is understandable from the point of view of

resource allocation. What these reports do tend to be good at providing is information regarding commodity dependency, actual projects that fair-trade monies have been channelled to finance, and a rich source of facts regarding the political barriers to trade. A similar statement is applicable to a number of studies that have been undertaken by the Natural Resources Institute in association with the University of Greenwich.

Blowfield and Gallet (2001) for example detail well the practicalities of how fair-trade works at the level of the plantation rather than that of the small producer. Interestingly, it was observed that the social premium gets predominantly absorbed by the purchase of European export licences (prepayment required per quarter). It is also remarked that the plantation appears to be run in a more socially progressive manner than what the authors referred to as the "Ghanaian norm". However, possibly damaging assertions of efficiency, suspicions are raised about how commercially viable the whole operation would be in the absence of fair-trade. Relevant from the perspective of caring for material impact, actual wages of plantation workers are observed to be no different from those of standard casual day rates (both above the minimum wage). However the workers of the fair-trade related operation did enjoy the status and security of being permanently employed.

Within a study of farmers from the Mexican state of Oaxaca, Aranda and Morales (2002) imply that the co-operative alone is still far and away the most essential institution for keeping farmers out of poverty. The authors appear to value fair-trade predominantly for its ability to help the co-operative maintain membership number during periods of low prices.

By comparing the respective value-added elements in the supply chains of conventional and fair-trade operations, Mendoza and Bastianesen (2003) paint a somewhat uncomplimentary picture regarding the relative inefficacy of fair-trade (Appendix 1.1). While acknowledging that fair-trade producers do receive a superior

proportion of the value chain, the authors assert that scale is the crux of the problem. A 'self-aggravating loop problem' emerges in which reduced scale and inefficiency force prices to be higher than conventionally traded goods, which in turn cements demand at such levels to hinder it from reaching a height that would enable improvements in scale and efficiency. Suggested fixes include: dilute the fair-trade criteria so as to increase the incentives for more mainstream firms to get involved, allow existing fair-trade intermediaries to pay the fair-trade rate to non-certified producers, try to more directly channel the fair-trade surplus into technological and organisational enhancements, and become radically more demanding in terms of quality. While the suggestions are interesting, not all of them are straightforwardly feasible; certain legal issues may arise, and it must be mentioned that FLO does to a degree already make efforts to implement a number of these suggestions.

Zehner (2002) points out how it can be overly simplistic to routinely assume that a reduction in middlemen will automatically generate a scenario in which producers can be made better off. It is asserted that green coffee procurement is precisely the type of product which requires middlemen e.g. the quality is difficult to observe and the product is acquired from a highly fragmented supply base. It is thus argued that within the market for green coffee, effective competitive middlemen play the vital role of reducing buyers' search costs and in turn stave off the likelihood of an adverse selection problem. Adverse selection in this instance is said to occur if buyers are uncertain of the product's quality and react by only ever being willing to pay the average price. Hence, the below average quality producers would be the recipients of a free ride, while the above average quality producers would question negatively the incentives they face. One may speculate that the Nash equilibrium of such would likely be that producers withdraw from trying to improve the quality of their crop. Zehner (2002) concludes that the root cause of the problem is an absence of competitive markets for intermediaries,

and formulates the opinion that fair-trade alone cannot provide a meaningful solution to this problem.

Incorporated within two case studies of Tanzanian coffee and Ghanaian cocoa, OPM (2000) provide a thorough overview of the general workings of fair-trade. While the case studies on offer present a rich insight into the commodities in question and the importance of those commodities to their respective communities of origin, the discussion of impact is predominantly limited to the cooperative as a whole rather than the individual producer. In this respect, although declared to be mildly helpful, the assistance of fair-trade is proclaimed to be fettered by the low proportion of sales it represents. In addition, the disclosure of how other forms of financial assistance have accompanied fair-trade leads to considerable uncertainty regarding its *ceteris paribus* contribution. The report is unique in pointing out that the existence of fair-trade can lead to overly generalised and exaggerated criticism of other intermediaries.

Prior to any further engagement of fair-trade specific case studies, a brief discussion of coffee sets the scene for much of the literature that is to follow. This is justified by the pride of place this commodity occupies in the ranks of fair-trade. An inspection of the state of the coffee market is a requisite of understanding the principles which underpin the existence of fair-trade.

Structural imbalances and oversupply characterise the global coffee market. Ponte (2001) summarises the consequences of the ending of the International Coffee Agreement (ICA) as leading to lower and more volatile prices, with a higher proportion of income being retained by importing countries (traders, retailers, but mostly roasters). A figure from Talbot (1997) illustrates well the temporal adjustments in the value chain (Appendix 1.2), the most striking alteration of which being the rise and dominance of 'value-added' that is equated to consumption countries. A broad review of the coffee literature shows that scholars appear near unanimous in recognising the roaster to be by

far the most dominant player in the chain. Indeed, Ponte (2001) informs us that two groups together command almost half of the global roasting market; Philip Morris with 25% and Nestlé with 24%. Furthermore, the latter boasts a 56% share of the soluble market. The former, Phillip Morris is associated with the ownership of eleven different affiliates and brands. With respect to these concentrated holdings, the competition that supermarket shelves appear to exhibit can be said to be little more than a mirage. It is further claimed by Ponte (2001) that, via strategic choices taken throughout the 1990s, barriers to entry have increased for both roasting and trading.

While this apparent lack of competition makes for a problem at the level of the producer, it must be borne in mind that supply chain competition has to be checked at many different levels. One place in particular in which there does appear to be healthy competition is the national exporter level. Reinforcing this view, Karp and Perloff (1993) construct a theoretical and empirical model that affords a conclusion in which the two globally dominant producers (Brazil and 'Colombia at the time[5]') behave significantly more like price takers as opposed to price makers.

Ultimately what the coffee literature as a whole leans towards is a description of precisely the sort of market failures that are required to give credence to intervention both at the practical and theoretical levels. In relation to this, it's also worth reminding oneself of the closeness of resemblance between agricultural markets and markets of textbook competitiveness. As will be dwelt upon in Chapter III, this more than anything else informs us why the marginal products of industrial and service labour will nearly always surpass those of agriculture. As is often the case with many suggestions of market failure, one should think not of *'the'* market; but rather consider that failure is sometimes made socially reconcilable via the consequences of exchanging different returns to labour *'between'* different markets.

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[5] Vietnam have since surpassed Colombia for the No.2 spot.

Imhof and Lee (2007) provide a well-built case study of coffee production in the relatively impoverished Bolivian province of Caranavi. They endeavour to investigate the impact of fair-trade as regards poverty, income inequality, conflict prevention and what effect fair-trade might have on neighbouring producers who do not participate. While no econometric model is specified, the depths of data collection are such that this paper more than holds its own against most other case studies.

Maintaining the flow of discussion with respect to impact, four entities are observed: two fair-trade cooperatives (Coaine and Mejillones), one intermediary that is not certified but that does in practice subscribe to the general ethos of fair-trade (Antitrade), and one 'normal' profit maximising intermediary (Copacabana). A data table of summarised observations is included in Appendix 1.3. The descriptive statistics tell a story in which the net income of fair-trade producers is on average greater than that of conventional peers. Measurement of material welfare, as taken by indicators of consumption and standards of living also bode well for fair-trade. Noteworthy aspects include better access to potable water, greater availability of electricity, and the decreased likelihood of having to engage in alternative forms of income generation.

Findings on income inequality and conflict prevention are somewhat inconclusive. For example, on balance fair-trade is considered to fill the uncompetitive void and force all intermediaries to bid up prices – thus indirectly supporting conventional producers in the process. But if on the other hand world prices were to fall, fair-trade producers receive the protection of a price floor, whereas the exposed incomes of their contemporaries tumble, hence aggravating local income inequalities.

One of the most significant impediments to investigating the impact of fair-trade is the absence of time series observations. However a glance at the differing educational attainment between parents and their children can provide a compensatory proxy of sorts. Indeed, it is highly interesting to note that while producers selling to Copacabana

exhibit relatively better educational statistics, a generation or so later, the children of the other producers have largely caught up with or surpassed the offspring of Copacabana producers. For example, 41% of Copacabana producers received no education and that figure appears to have remained constant for the children of those producers. The comparable figures for the two fair-trade co-operatives show falls in the occurrence of no education from 75% to 27.7% and 52.5% to 26% respectively for Mejillones and Coaine. This seemingly clear failure to uplift a consecutive generation is, in terms of raw data, arguably the most telling observation within the paper. The authors appear very much convinced that the long term value of fair-trade is to be found in capacity building, for which they argue the social premium plays a more compelling role than higher prices per se. Partial justification for that stance appears to be derived from the absence of a social premium for Antitrade producers. However, in response to this, it could be argued that they may have let the element of 'low income variance' pass by unappreciated. Both of the fair-trade co-operatives in this study used their social premiums for improving production facilities and paying off co-operative debts. The report also contains a section dedicated to the impact of fair-trade on landless labourers. It is stated within the conditions of FLO that labourers must not receive below the regional average or the national minimum wage. It was found that daily labourers in fair-trade fields were paid the same nominal wages as their conventional counterparts. However, after adjusting for the subsistence and shelter that the non-fair-trade labourers were not necessarily the recipients of, assuming a 6-day working week the extra value to fair-trade labourers was calculated to be 44% above that of conventional labourers.

Ultimately, Imhof and Lee (2007) provide a rich array of stats and in depth discussion that offer compelling evidence in support of fair-trade; there does however remain some scope for trying to disentangle correlation and causality – as the authors themselves rightly acknowledge.

Reynolds (2002) gives an outline of the organisational structure and logistics of the fair-trade movement, taking a sociological perspective that is very much concerned with *empowerment*. She asserts that the effectiveness of income gains being translated into intrinsic welfare should be taken as neither universal nor constant. In trying to appreciate how that transformation can be optimised, she directs our attention to the organisational characteristics of different producer groups, the capabilities and ideological orientation of internal decision makers, and other factors of influence that stem from the wider economic and political spheres. Information and market transparency are also highlighted as key elements in realising the long term aim of producer empowerment.

An index of empowerment would indeed be a fine addition to any study of fair-trade. However, notions such as 'empowerment' can be softly subjective and notoriously tricky to quantify; it is for that reason some economists may prefer to slip past them with less notice, or at least default to taking refuge in the utilitarian underpinnings of their own discipline. Yet, there are bridges to be built and Rawls's consideration that 'self-respect' be regarded as *"perhaps the most important primary good"* (1971 pp.440 − 6) provides the intellectual impetus for economists to go in search of bricks and mortar to recognise that end.

This is a request that some have paid partial heed to, because while it is true that utilitarian traditionalists are (at times for good reasons) less than keen to shift the focus away from income (personal choice), this is not the case for economic literature as a whole. In particular a number of avenues of development economics, epitomised by Sen (1999), show considerable preference for moving the debate towards non-instrumental aspects of wellbeing. Directly relating to fair-trade, further support for the capabilities and empowerment perspective is put forth in Reynolds *et al.* (2004), in which the authors examine a number of coffee co-operatives in Mexico, Guatemala and El

Salvador. A conclusion is built around the identification of the greatest need being an expansion of capabilities and anecdotal evidence that fair-trade monies are indeed being channelled in this direction.

In addition to providing a sound insight into the specifics of coffee production in general, Milford (2004) offers three categories of coverage: a theoretical engagement of the issue, a defence of agricultural cooperatives in general, and case study. The first two of these are very much entangled and shall be discussed in the later stages of this chapter. Her case study, which centres on the production of organic coffee in Chiapas, Mexico, shall however be discussed within this section. With the aid of interviews, observations and questionnaires, her findings support the idea of a strong co-operative being a positive force favouring the welfare of *both* members and non-members. Her paper also highlights the benefits of fair-trade which are not directly linked to the size of the premium, chief of which appears to be the option to receive 60% of payment upfront. However, in practice it would seem that not all of the fair-trade intermediaries comply with this apparent obligation. Milford's research points to the necessity for a co-operative to be able to match the efficiency of private investor-owned firms (IOFs) and the likely requirement for a subsidy to achieve this. She insists it is the per unit approach to pricing coupled with the competitive threat of losing a contract that differentiates fair-trade from a standard government subsidy, and for the co-operatives which she visited, claims to have found no evidence of 'lazy grazing' on fair-trade subsidies. While conceding that fair-trade alone cannot solve the global problems that producers in developing nations face, her case study concludes strongly in favour of fair-trade.

Ronchi (2002) undertakes a qualitative case study of Costa Rican coffee co-operatives that have been involved with fair-trade for the duration of the 1990s. In her analysis, she makes a clear distinction between direct and indirect impacts (indirect

being the strengthening of the cooperative). Capacity enhancement stands out as being the major contribution of fair-trade. Captured within the same paper is said to be an improved sense of confidence that comes in part from a better understanding of export channels and the fostering of the sort of professionalism (capabilities) that gives rise to more effective utilisation of those channels. All of this receives a virtuous underpinning from the deliverance of relative price (income) predictability. The value of this stability is that it serves to counter some of the risk averseness one might typically associate with low income self-employment.

Staying with Costa Rica, Ronchi complements her 2002 paper with a related discourse in 2006. Within those reports the regulatory framework surfaces as another central factor of influence. In particular, presided over by the research and regulatory body 'Instituto de Cafe de Costa Rica' (ICAFE), 'Law 2762' offers coffee farmers explicit protection from exploitative forces. It is a requirement of the law that all producers sell their coffee cherries to an ICAFE registered mill (as opposed to middlemen) within a day of them being harvested. By monitoring post-processing export prices, ICAFE aims to ensure an input price for farmers in correspondence to their competitive marginal product. If ICAFE is accurate, this in turn restricts the mills' earnings to that of normal economic profit.

It can thus be argued that in the case of Costa Rican coffee, organisational competency and a corrective institutional setting resolve to be the critical and complementary factors in amplifying the benefits of fair-trade. In an example that relates to the former, a number of the co-operatives in this study earmarked 30% of their fair-trade gains to be put towards a 'social capital fund' and Ronchi appears convinced that other fair-trade cooperatives would be well advised to adopt similar arrangements. In line with such is the implication that any attempt to evaluate the wider impact of fair-

trade, say on a regional or international basis, must if possible take into account the organisational quality of the co-operative itself.

One such example of what appeared to be a poorly organised cooperative partnership is discussed in Tallontire (2000). Within this, warning signs emerge that some cooperatives may be prone to view fair-trade as a resource be tapped as opposed to a developmental opportunity to be grasped. Finally it is worth mentioning that one of the interesting observations to emerge from the interviews was that, "*Very few producers could recognise Fair-trade as the source of the improvements they acknowledged,*" (Ronchi 2002, p.11). In addition to what was already invoked by Ronchi (2006), her theoretical and econometric follow-up is addressed when this review moves to accommodate specifically that category of literature.

Nelson and Galvez (2000) look into to the effects of fair-trade on cocoa producers in Ecuador. The report, like many of the others, may be criticised for offering no numerical comparison to any control group of any kind. Nonetheless, some interesting points were put across.

The establishment of a 'cocoa school' is said to represent a tangible sign of capability investment. However, relating to the broader issues at hand, the fact that access to adequate infrastructure was cited as being the most binding constraint on economic development begs for attention to be given to the role the state must play in the provision of public goods – fair-trade cannot be substitute for those. Indeed, some would argue that addressing structural issues would be far more effective than fair-trade in terms of dismantling the sort of conditions that foster heavily unequal bargaining positions.

It is of further interest to note that during recent times the 'conventional' price on offer was noted to have almost (at brief times fully) converged on the fair-trade price. While producers with short memories will surely be tempted to question how a 'fair'

price can be so close to a 'conventional' price, the authors choose to see this as a mark of success for fair-trade – a positive spill-over or the consequence of 'demonstration effect' if you will. At a later stage in this chapter we will engage a theoretical perspective behind why this may indeed be *locally* possible. However, from the paper at hand (Nelson and Galvez 2000), in the absence of any systematic empirics, the suggestion that fair-trade is responsible for the convergence remains unsubstantiated. The overall conclusion of the report is that fair-trade successfully managed to break the pre-existing near-monopoly condition (oligopsony to be precise).

Poe and Kyle (2006) examine the impact of fair-trade on female basket weavers in Bangladesh. The conclusion is not particularly favourable to fair-trade. It is found that fair-trade wages are no different from the subsistence wages received by agricultural day labourers. There is however a partial reprieve to be found in the fact that without the fair-trade baskets these women would be unemployed. The example of this paper has been referenced so as to allow the reader a more complete view of the range of activities that fair-trade encompasses. Yet endeavours such as these, however well-meaning, shall not feature as a central part of this study. Focus shall instead be placed firmly on agriculture for the reason that it offers a far more fundamental foundation from which to build upon. The economic credibility of the movement is better preserved by relying on demand which is less frivolous and quasi-artificial.

1.3 CASE STUDIES II: ECONOMETRIC EVALUATIONS

Bacon (2005) offers a localised study of coffee farmers in northern Nicaragua and provides one of the few papers that examines statistical significance. Employing a two-way ANOVA approach it concluded with 99% confidence that fair-trade and/or organic certification leads to significantly higher prices for farmers. In addition, interviews with

both farmers and elected cooperative leaders led to a number of other interesting observations. In terms of the average price received, and average time taken to acquire payment, only the handful of farmers who were able to sell direct to roasters were the recipients of a better deal (US$1.09/lb, 33 days). Fair-trade outperformed all other options of sale in this respect (US$.0.84/lb, 41 days). The most common situation appeared to be that of co-operatives selling to conventional markets (US$0.41/lb 46 days). It was the farmers who made use of local middlemen that came off worst (US$0.37/lb 9 days). Apparent by the low number of days they are required to wait, the *middleman trade-off* is one which allows producers to satisfy their immediate economic needs in exchange for forgoing higher future returns. Finally it was reported that farmers who were connected only to conventional markets were four times more likely to anticipate the loss of their land title as a result of low coffee prices.

Becchetti and Costantino (2008, 2006) provide a thorough and detailed econometric analysis with the integral details of the methodology that was employed. The study takes place in Kenya and covers 18 products in all. Within the population four distinct groups are identified: 'Bio' farmers (long term affiliation to fair-trade, over 13 years on average), 'Conversion' farmers (short term affiliation to fair-trade), 'Onlyfruit' farmers (short term and partial affiliation to fair-trade) and 'Control' farmers (no affiliation to fair-trade). The relationship to fair-trade with respect to the relevant producers passes through an organisational group known as Meru Herbs who provide a link to an Italian fair-trade importer.

In 1991 Meru Herbs acquired the mandate of seeking to generate the sort of farming income that would justify expenditure on a large irrigation project of which the first phase was completed in that same year. As the area is classified as semi-arid, the project was envisioned to greatly enhance the prospects of the communities it was designed to touch. All the farmers in the sample are equal beneficiaries of the irrigation scheme.

With data gathered from an extensive questionnaire (100 questions), several regressions were run. The dependent variables were various indices of price satisfaction, food consumption and dietary quality, living satisfaction, technical assistance, infant mortality, education and child labour. The standard control variables include land size, number of dwellers, number of seasonal employees, age, sex, ethnic affiliation, religion, schooling years, marital status and the presence of additional income sources.

In terms of 'price satisfaction', both the conversion group and bio group came out as having a positive and highly significant state of affairs. The control group produced a small and negative coefficient of a similar inverse magnitude. Interestingly, in their working paper, the 'onlyfruit' group coefficient came out negative and only weakly (90%) significant. It is not too difficult to rationalise why the conversion group would have a tendency to exhibit more subjective satisfaction than the bio group. It possibly boils down to the tendency of people to exhibit more appreciation in the early stages of positive change. In other words, after 13 years of affiliation it is quite conceivable that bio farmers do, to a degree, take their fair-trade position somewhat for granted. Overall the price satisfaction results add some broad empirical support to the intuitively straightforward suggestion that access to fair-trade channels are beneficial by virtue of both higher net returns and reduced price (income) volatility.

The results for food consumption and dietary quality bode equally well for fair-trade affiliated producers. In each case membership of the control group is shown to have a negative association. The results are 95% significant for food expenditure, the interval falling to 90% in the dietary quality regression.

Further models that were run to look for a relationship with living satisfaction, and technical assistance all offered up a picture of fair-trade that is broadly favourable. Yet other explanatory variables did begin to become relatively more important than in previously mentioned models. Notably, for living standard satisfaction, 'other sources

of income' is as significant as fair-trade, with a much larger coefficient. Interestingly, the significance of 'other sources of income' remains but turns negative when regressed against infant mortality. In addition, the analysis suggested that fair-trade was of no consequence to a suppression of infant mortality. Rather, an improvement in the score of that variable was more explicable as a general association to Meru Herbs irrespective of any relationship with fair-trade. As for technical assistance, while the 'years of schooling' coefficient is of a lesser magnitude than fair-trade, the significance it exhibits is the same as fair-trade.

Finally, regressions were run to investigate the impact of fair-trade on child labour (defined as the number of children between 6 and 15 not attending school) and human capital investment (defined as the number of children between 6 and 18 who are attending school). Regarding descriptive statistics, something of a surprise was made evident by the conversion group being on average the best performer in both of those categories. Perhaps even more of an eye-opener was that the control group outperformed both the 'bio' and 'onlyfruit' groups with respect to infant mortality. Estimates did indeed pick up on this and declare a positive and highly significant coefficient for the control group, and a weakly significant (90%) and negative coefficient for the bio group.

The situation for child labour and human capital was less flattering to fair-trade. The bio group came out insignificant in both cases, with a negative coefficient in regards human capital. The conversion group offered some respite for fair-trade in that the direction of its coefficients reflected positive social outcomes, yet theses results passed only the 90% confidence interval. The poor performance of the 'bio' group poses some issues.

The implicit suggestion of increased returns to employment raising the opportunity cost of schooling is unlikely to be one that nestles comfortably with the fair-trade

movement. That is of course by no means the only possible reasoning behind these results, it is just the most immediate which comes to mind. Speculation aside, this lacklustre performance of human capital investment does surely warrant further investigation[6].

Ultimately, with the exception of the rather lacklustre findings regarding human capital and child labour, the paper concludes that access to fair-trade channels has bestowed a broadly positive impact upon the region of inspection. Moreover Becchetti and Costantino (2008) have contributed a strong analytical set-up that can potentially be taken and transplanted to the study of other regions. It is however a confession of the authors that more could possibly be done to further control for the (apparently positive) spill-over effects of fair-trade on proximate producers. In line with that admission, there is the possibility that their results may underestimate the impact of fair-trade.

Becchetti and Castriota (2008) offer a concise study of a Chilean honey co-operative. Applying standard regression analysis and propensity score matching (PSM) techniques to a cross-sectional dataset of around 200 producers, the authors conclude strongly in favour of fair-trade. Interestingly, the cooperative in question pays a slightly lower price for its members' honey, but at the same time provides an impressive array of assistance: free transport for honey, zero interest advance payments, product lab tests, training courses, and a stable agreement in respect of the quantity to be purchased. Their conclusion relates in particular to productivity and associated net income. Affiliation to fair-trade is shown to be associated with a cumulative productivity differential of 83,186 pesos (US$ 166) per hour of honey-based income, as opposed to 141,302 pesos (US$ 283) – a remarkable lift of around 70%. A percentage increase in fair-trade sales was estimated to be worth a per hourly income increment of 707 pesos (US$ 1.4). Training

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[6] Becchetti et al. (2008 p.3) in a follow up note the authors claim that as a response to their paper the co-operative has began to take practical steps to address this human capital issue.

courses in particular were accredited with facilitating these gains in productivity, and internal to the relationship the authors found a positive and significant relationship between fair-trade and training activities. The paper places emphasis on these improvements coming about in the presence of a lower wholesale price – this they call "*the fair price myth*" (p.24). This is indeed a noteworthy finding, and one that opens the door to a view of the mechanics of how fair-trade achieves its impact. It must however be noted that while we are informed that the wholesale price is less than what peer wholesale buyers pay, we are not given any information regarding the retail end of this supply chain. Therefore, it may be tenuous to relegate the 'fair-price contingent' to the realms of mythology. In order to corroborate the claim that is being made, we would need to know where the monies that finance the 'additional services' that the co-operative provide come from, because if a fair-trade based mark-up at the (retail) end of supply chain was contributing to the provisions of those services, then the stated myth would be not be a myth. Nonetheless, the overall findings strongly favour fair-trade, and the fact that it is productivity based findings, aligns nicely the often abrasive relationship between equity and efficiency.

Providing some respite to the often touted criticism of fair-trade not dealing with the lower depths of the poverty bracket, Becchetti *et al,* (2008) econometrically examine the livelihoods of 240 Peruvian artisans. Unlike previous papers by one or more of these authors, the price element of fair-trade appears to be granted a more prominent role. Indeed the typical differential between fair-trade and conventional intermediaries is stated as being a remarkable 4.7 times higher. In addition, the encouragement of socially responsible tourism, an endeavour with which fair-trade organisers are said to actively participate, there is in addition a 50% mark-up on top of the fair-trade price. The findings may be summarised as a clear estimated nonlinear (concave) relationship between years of affiliation with fair-trade and material elements of welfare. An

additional linear relationship emerges between the opening of consecutive trade channel, of which fair-trade is one of a number of outlets. Although an indirect relationship is considered, strong and significant associations are found to be present regarding fair-trade exhibiting a positive effect on subjective levels of happiness and self-esteem. The data itself is cross-sectional, but by taking a back-cast panel approach the authors are able to mould some dynamics into their inference and observe fair-trade to be significantly associated with the willingness and/or ability of parents to have their children schooled. Most of the results bode well for fair-trade, however there is some mixed evidence in terms of externalities. Firstly, there is evidence to support that fair-trade increases the bargaining power of all producers, but in one of the two cases the authors cite that they cannot reject the LeClair (2002) hypothesis of fair-trade potentially depressing prices for non-participating producers.

Ronchi (2006) in an analysis to justify both the existence of fair-trade and co-operatives in general, draws upon a perspective which has come to be known as the New Empirical Industrial Organisation (NEIO) literature, and attempts to econometrically verify the existence of market power. Within this approach, market power is defined simply as being "deviations from marginal cost pricing" (p.14). The sought-after metric is one that conveys how distant the situation is from a perfectly competitive market, and thus the identification of a benchmark at which one can legitimately declare that oligopolistic conditions are permitting market power to be exploitatively exercised.

From the outset it is conceded that there can be difficulty in trying to empirically distinguish between market power and efficiency (see Bresnahan 1982). Explained simplistically, the dependent variable is what is referred to as the mark-down measure, $(P^* - Pr)$ where P^* is the green coffee output price (world price) and Pr is the output price that the mill reports. Where $P^* - Pr = 0$, the mill has reported the true price and

by the extent to which *P* – Pr > 0*, this measures the margin that a mill/exporter has earned in excess of its long run average processing costs. In line with assumptions that are about to be disclosed, the presence of any mark-down measures greater that those of co-operatives are taken to be evidence to support the existence of market power being exerted. The first assumption is that this is only a measure of market power if the mill is operating at constant returns to scale (CRS); in the absence of CRS it may just as evidently be a measure of efficiency. Under this CRS assumption, the regulatory body (ICAFE) can be sure that subtracting the minimum long run average processing costs (APC) results in producers receiving at least the value of their marginal product (VMP).

P* = MPC + VMP

 => P* – MPC = VMP

CRS => MPC = APC

ICAFE apparently calculates and allows for the mill-specific subtraction of APC_{icafe} from the output price. It follows, that by legislatively setting the minimum price that the producer is to be paid (Pp), ICAFE will strive to ensure that prices are at a level where $P^* - APC_{icafe} = VMP$ and so it follows that if $P^* - APC_{icafe} \equiv Pp$ then $Pp = VMP$.

In order to navigate around the unrealistic CRS assumption, Ronachi calls upon what she refers to as 'the institutional reality of Costa Rica'. Two elements get factored in, the first being that co-operative mills are less (scale) efficient than other mills (lower demand curve); this is backed up via a discussion of the additional services that a co-operative mill is expected to provide for its members. The second is that there is no principal-agent problem in relation to the export dealings of the mills' agents. In other words, even if they possess the ability to do so, co-operatives (apparently by definition of ownership) do not exercise market power – that would be self-damaging corruption. While the latter assumption is reinforced with a rich discussion of Costa Rica's institutional norms, still there is no shortage of scholars who would pour scorn on the

assumption of a perpetually well-behaved agent. Indeed, evidence in favour of the sceptic can be found in Mendoza and Bastiaensen (2003, p.43), in which serious doubts were raised regarding the transparency and democratic qualities of the co-operative in question. Another more explicit example of administrative dishonesty is on show in OPM (2000, p.3-22) where it is cited that in 1997 several members of Tanzanian co-operatives were arrested and charged with corruption. Further examples of problems that relate to co-operatives can be seen in Booth (2008), Hawley (2006), and Weitzman (2006).

A large quantity of unbalanced firm-level panel data (v = 21, n = 157, t = 26 years) was mobilised in order to construct mill-specific P* − Pr estimates. A fixed effect formulation is deemed more appropriate than a random effects model, and it is openly conceded that any dealings with the so-called "world price" tend to lack universality due to various transaction costs that are associated with different final destinations.

The results indicate that foreign owned mills, fair-trade mills and co-operative mills all offer the effect of reducing the mark-down measure in relation to the performance of domestically owned non-co-operative mills. The strongest performers of these are the foreign owned mills, as they on average record mark-down measures of almost £0.20/kg lower than domestically owned conventional mills. This would suggest that foreign owned mills are either more efficient or that they exercise market power. Ronchi leans towards an opinion that it is a combination of both. Yet, without being able to observe an estimated input demand curve for foreign owned mills, it is impossible to know precisely how much of the differential to attribute to efficiency and how much of it to blame on market power. This, it must be said, deposits a few creases in the analysis. However, at the very least, it cannot be concluded that market power is entirely absent from the farm gate – especially as it emerged from interviews that the monitoring ability of ICAFE can at times be somewhat stretched. Incidentally, if one were to adopt an

optimistic angle of 'predominate efficiency', this would equate a compliment of efficiency in regards foreign ownership and the vertical integration that often accompanies it. Hence, from that perspective, it is interesting to note that these observations appear to contradict the often touted suggestion that multinational involvement is associated with producers receiving a lower share of the value chain. From that vantage point, the analysis is at least as complimentary to foreign ownership as it is to fair-trade and co-operatives in general.

A more refined check of market power comes by making a comparison between cooperative mills (many of which are fair-trade associated) and the domestically owned non-co-operative mills. The contrast displays a statistically significant lower mark-down measure in favour of the former; 'in favour' because, holding firm to the 'co-operatives never exercise market power' assumption, this would appear to suggest that in spite of stern legislative efforts, market power is still exercised at the farm gate of Costa Rica's coffee. In terms of further isolating a specific fair-trade effect, Ronchi finds that fair-trade mills on average record a mark-down measure £0.06/kg lower than that of conventional co-operatives and domestically owned single plant mills (significant to 90%). Again clinging to the assumption of co-operatives being entirely honest with their members, this may be interpreted as fair-trade bestowing an additional benefit of efficiency. Therefore, overall, if they are to be seen as responses to the market failure of market power, fair-trade and 'co-operatives in general' receive from Ronchi (2006) some quantitative credence to support the legitimacy of their existence. Furthermore, if market power manages to surface in the presence of institutions as strong as those in Costa Rica, it implies that there is amplified scope for similarities to occur in regions in with institutional support is weaker.

1.4 THEORETICAL PERSPECTIVES

LeClair (2002) offers a simple model that moves to depict the unequal deficits of efficiency between a fair-trade subsidy and a direct payment. It is shown that the cost to the consumer (in the rich country) is greater than the subsidy received by the producer. The message is that it would seem that the 'warm moral glow' consumers receive from purchasing fair-trade goods could, at no extra monetary outlay, increase with a direct payment. The Pareto improvement that LeClair hints at hinges on an implicit assumption that the relationship between a given quantity of utility and given amount of money is constant – and that the mechanism of transfer does not influence those respective utilities. The obvious counter against this is that the utility of producers might well be affected by how dignified they view the transfer mechanism to be. Chapter II picks up on this 'aid for utility' for perspective.

   In the model, fair-trade handicrafts are employed to illustrate the loss of efficiency. It can however be shown that to follow the theory and replace handicrafts with agricultural goods leads us to a distinctly dissimilar conclusion.

P_H = price of handicraft

Q_H = quantity of output

R_H = cost of raw material requirements per unit of output

Leclair states the net income of the artisan, essentially total revenue minus total costs. This holds for agriculture, with the exception that a fixed cost element would likely be involved. However as fixed costs are assumed to be constant leaving them out makes no major difference to what is being depicted here.

(L1) $P_H Q_H - R_H Q_H$

The alternative trade organisation (ATO) provides a link to an affluent market, promotes the fair-trade products and thus stimulates demand. It is at this point things begin to differ for agricultural goods. The ATO provides *new* demand for handicrafts, but in the case of agriculture no *new* demand is being created. It is simply that there is a transfer in demand from conventional goods to fair-trade goods. The implication of this is that a supply response may be neither necessary nor forthcoming. As will be seen, factoring this into the theoretical conclusion culminates in a starkly different message.

(L2) $P_H(1+a)Q_H(1+b) - R_HQ_H(1+b),$

where a and b > 0. (1+ a) represents the multiple that will be added to the price by way of a fair-trade premium. (1+ b) represents the multiple by which supply will be required to increase as a response to new demand. Thus the difference between L1 and L2 appears as so:

(L3) $(a+b+ab)P_HQ_H - bR_HQ_H$

Therefore, the cost of Q_H units to the fair-trade consumer in the developed country can be written as $P_H(1+a)Q_H(1+b)$, which is greater than the direct subsidy by bR_HQ_H. It can thus be seen that 'b' is the component that determines the extent to which fair-trade is less efficient than a direct transfer. The smaller the value of 'b' the closer the convergence on efficiency.

LeClair (2002) correctly speculates that handicrafts are likely to be highly supply elastic. Therefore the argument he formulates of fair-trade being less efficient than a direct transfer largely holds. However the situation in agriculture could not be more

different. The short run aggregate supply (SRAS) curve in agriculture will be perfectly inelastic (b=0). Hence, if one accepts that value, in the short run there would be a situation of neutrality between the efficiency of fair-trade and a direct transfer. In the long run, supply theory suggests that 'b' would be likely to increase, yet in relation to agriculture in general (barring extreme circumstances), the numbers exist to suggest one is accurate enough in expecting a subtle response of supply. For example, in relation to coffee, Lewin *et al*, (2004) estimate the elasticity of Latin American supply to be 0.15. So, while LeClair's theoretical approach still stands well overall, its application to agriculture rather than handicrafts facilitates a starkly dissimilar conclusion, so much so that it may even be morphed into an argument supportive of fair-trade in agriculture. This remark is made not just in the context of the AS curve tending to be highly inelastic, but also because it is pointed out that fair-trade mobilises funds that would otherwise not come into existence – itself a boost of justification that partially counters the claims of inefficiency. As was mentioned in the previous section, the empirical evidence on offer in Becchetti *et al*. (2008) suggests that we can at this stage can neither accept nor reject LeClair's hypothesis of a possible negative externality.

Maseland and De Vaal (2002) offer a theoretical analysis based on an impressively practical definition of fairness. Fairness in this paper is based on the relative performances of free trade, fair-trade, and protectionism. Two analytical angles are employed. The first is a Heckscher-Ohlin trade framework (see Appleyard *et al*. 2006). The insightfulness of this apparatus is to be found in its ability to provide criteria for judgement outside of the standard Paretian criteria.

In accordance to what appears to be a very Rawlsian distinction of fairness, Maseland and De Vaal make their statements dependent on how well the distributional effects of fair-trade bode for the group that are the least well off. Their declaration as to whether fair-trade is preferred hinges exclusively on satisfaction of that criterion. The

model assumes a two country, two goods, and two factors approach. One country is rich, the other is poor, and it is further assumed that the consumption of all people in the rich country adheres to the principles of fair-trade. The conclusion generated is that fair-trade is always superior to protectionism, and sometimes superior to free trade. Its (distributional) superiority over free trade is depended on the price elasticity of demand for the good in question. The elasticity must be sufficiently low for the abundant factor in the poor country to benefit. Where this is not the case, free trade is preferred to fair-trade.

As a consecutive approach within the same paper, the authors also employ a static version of the economic geography model that owes its existence to Fujita *et al.* (1999). The performance of fair-trade in this model comes out as highly case-dependent. In particular, transportation costs emerged as a highly influential variable. Yet, as an essential point of reference, 'transportation costs' in this model are to be thought of as more than what the name suggests. Rather, the term embodies all the elements that one typically associates with trade barriers – both natural and artificial. Relative to conventional trade, fair-trade offered increasing returns to agricultural producers only as transportation costs fell. This would seem to theoretically suggest that fair-trade would work best as an accompaniment to free trade because in the presence of prohibitive transaction costs (i.e. protectionism) fair-trade made little difference.

The remaining theoretical approaches that are to be discussed all draw their validation from alleged anti-competitive conditions at the farm gate. In many of the papers to follow the uncompetitive conditions are largely pre-assumed. It is hoped that previous entries in this literature review (particularly those on coffee) serve as an alibi to the acceptance of some of those conditions.

Milford (2004) draws her approach from various co-operative orientated papers, in particular Furubotn (1976), Porter and Skully (1978), Helmberger (1964), Taylor

(1971), Le Vay (1983), Sexton (1990), and Deininger (1995). The general idea behind the promotion of co-operatives is that they serve as a counterbalance to a monopolist buyer (purchasing cartel in reality). Milford's thesis holds firm to the idea of a co-operative acting as a *"competitive yard stick"* by providing a visible measure of what Helmberger (1964) refers to as a *"barometer of exploitation."* In essence, a sort of demonstration effect is being proposed. That is to say, the visible presence of a price differential is said to make non-members acutely aware of their own state of relative misfortune. In full view of this, the purchasing competitors to the co-operative, IOFs, will seek to appear less exploitative by way of *not* maximising the returns that they as oligopolists could exploitatively acquire. Indeed, in their paper on Bolivian coffee, Imhof and Lee note that, "*Private sector companies were increasingly entering the local coffee market and offering prices similar or higher to fair-trade.*" (2007, p.73). Also, post fair-trade, Starbucks did put forth an initiative for its own in-house genre of ethically sourced coffee, and the premium paid was perceived to be quite generous (Tallontire and Vorley 2005). Essentially the co-operative is being regarded as a formal institution that alters the incentive structure of the economy. The framework employed to explain this is that of a standard monopsonist. Figures 1.1 and 1.2 offer graphical representations of the situation.

Figure 1.1 The depression of the producers wage by a purchasing cartel
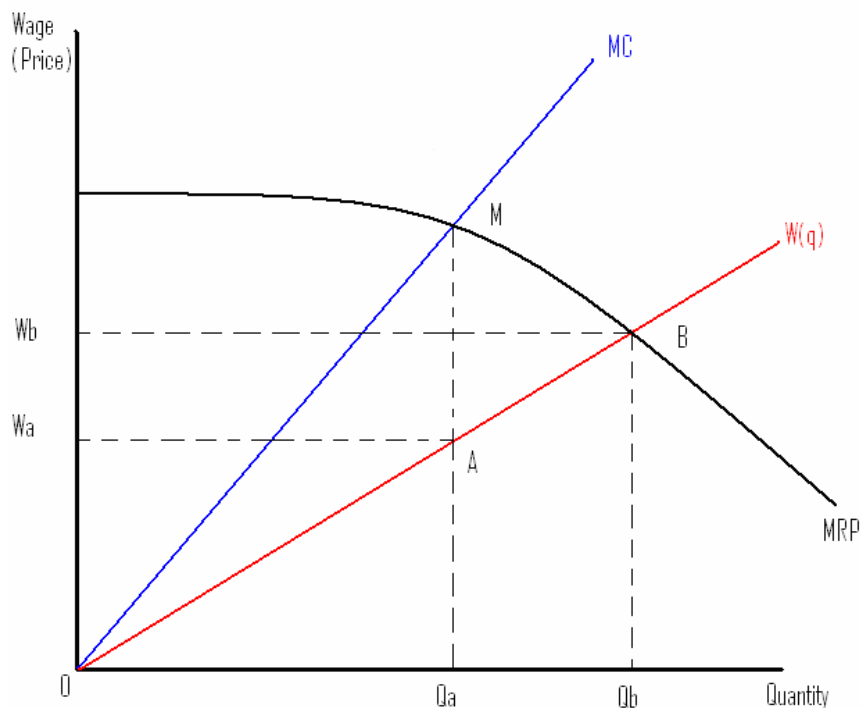
The supply curve = W(q) = Price * Quantity = Producers Gross Income (Y). In a competitive situation, the producer's wage (price) is market determined and occurs at point 'B' where the Marginal Revenue Product (MRP) intersects the supply curve (W(q) = MRP). At this point, producers supply Qb in exchange for wage Wb. This, under the standard assumptions of a Marshallian partial equilibrium analysis, is said to constitute the competitive outcome. The presence of a monopsonist invalidates a number of the assumptions and so pushes the outcome away from point 'B'.

It is, by definition, taken that cartel members have the awareness that the quantities they purchase will affect the price of all units purchased and in turn affect their profits. Accordingly, the marginal cost (MC) curve of the cartel is steeper than the producers' supply curve (if it was a pure monopsonist it would be steeper still). Acting in its own interests, the purchasing cartel maximises its profits, at point 'M', where MC = MR. As

it only desires Qa, it pays the wage Wa, and thus the situation is such that the returns to the producer are depressed (Wa*Qa < Wb*Qb).

As the assumption of decreasing returns to scale is being made, capacity constraints dictate that no single firm possess the ability to capture the entire market by way of tabling a single high price offer. Indeed, if increasing returns were to be the case then, as Milford (2004) points out, the problem would solve itself by virtue of an upward bidding process that would result in a competitive outcome (Bertrand competition) – formally true even in the case of just two buyers (the so-called Bertrand paradox).

In order to provide a counterbalance to the cartel, suppose producers form a co-operative. It shall be the aim of the co-operative to try to push the outcome away from point A towards point B. In order for this to take place, two potentially traitorous conditions must be satisfied. Firstly the efficiency of the co-operative must be comparable to that of the IOF, and secondly the co-operative must operate a policy of openness to new members. If the co-operative is just as efficient as the IOF (identical MRP curves) and operates a policy of complete openness to new members, then it stands to reason that all producers would flock to receive the co-operative's higher price. In this case point B proves unsustainable in the long run as the quantity produced will continue to rise until supply equals the average revenue product (ARP), at which point, the marginal costs of production will be in excess of the marginal revenue (Figure 1.2 below). At this coordinate, represented by point D, the marginal costs of production correspond to the producer's wage, thus there are no excess profits being made. The net income of the co-operative members is lower than what it would be at point B.

Figure 1.2 Co-operative with open membership
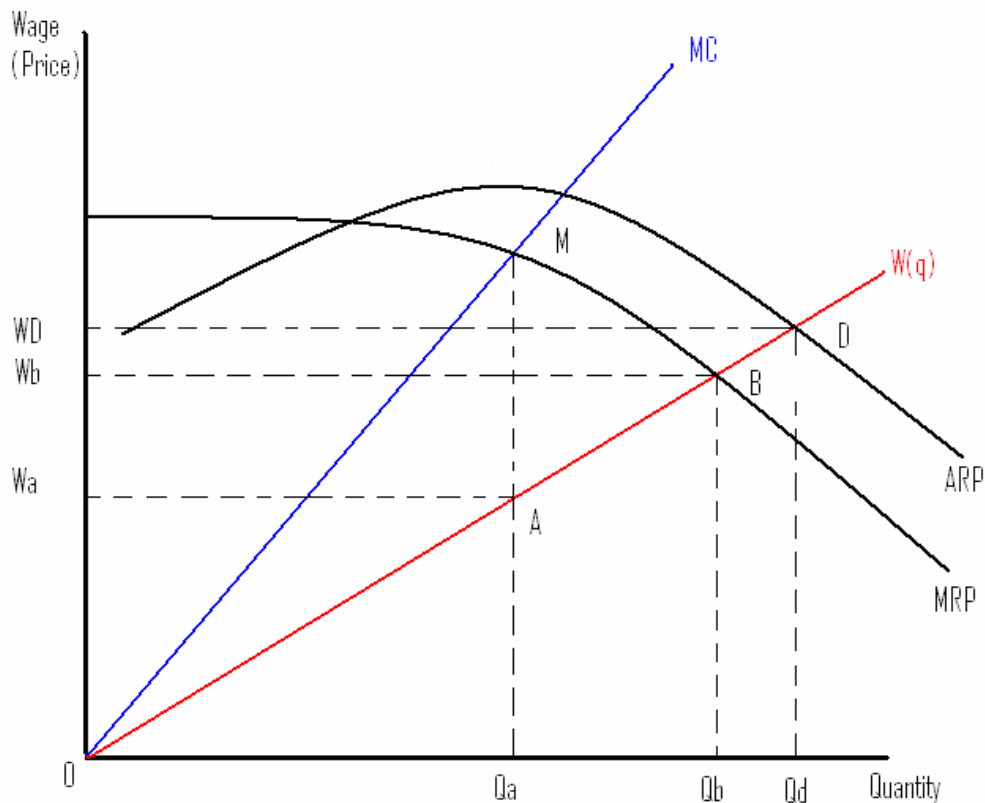
If on the other hand, the co-operative restricts membership such that point B will be sustained for its members, that would be fine except that it might substantially worsen the situation of the non-members. In the knowledge that those locked out have nowhere else to turn, the barometer of exploitation, while visibly present, would be practically worthless in terms of any 'threat of action' – there would be no *meaningful* incentive for the IOF to appear less exploitative. The solution is for the co-operative to set the cost of membership at such a rate as to effectively balance membership at a level which will bind production to the optimal position (Qb). By doing so the demonstration effect retains its relevance. If the IOF now squeezes non-members, it brings into play the incentive for them to pay to join the co-operative – the membership fee remains

unchanged but the net gain of membership increases. It is the threat of non-members having the option to join that gives the barometer of exploitation its practical worth.

Confronting the condition which requires the co-operative to be comparably efficient to the IOF leads to a more direct engagement with the role of fair-trade in strengthening the hand of the producer. Suppose that in Figure 1.2 the barometer of exploitation was represented by the distance from A to B. In this case, assuming that membership is not strictly restricted, the IOF has an active incentive to have its purchase point tend towards B. It may never reach B, but the presence of the co-operative is still working to partially restore competitive balance and in turn uplifting the welfare of all local producers. However, suppose, as Milford does, that the costs associated with cooperative membership result in the co-operative being less efficient than the IOF. The outcome of this is depicted by a relatively lower MRP curve (MRP co-op in Figure 1.3).

Figure 1.3 Shifts in the co-operative's MRP
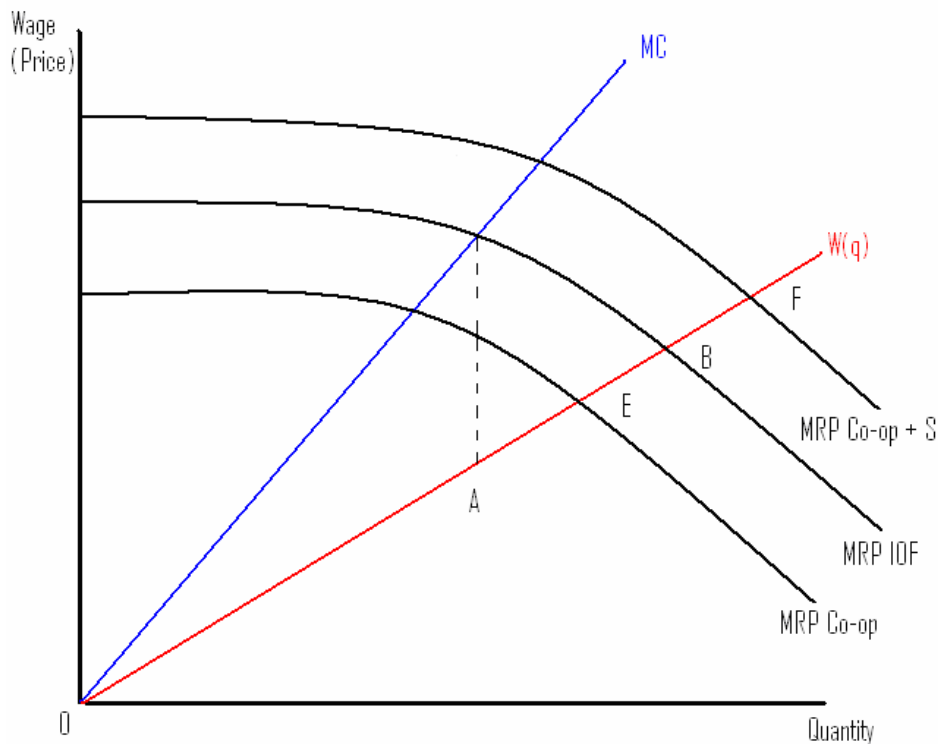
The relative inefficiency has reduced the measure of exploitation by the distance B to E. The visible yardstick now stands at A to E. Milford theorises that the application of a subsidy (S) – such as a fair-trade premium – will serve to increase the efficiency of the co-operative and thus restore balance, ideally 'MRP co-op' would converge on 'MRP IOF'. However she does justly note the possibility that the subsidy might push the 'MRP co-op' beyond the 'MRP IOF' and thus create an unwanted market distortion (MRP co-cop + S).

While there are background assumptions that beg of us to beware, still this 'strengthening of the co-operative approach' affords a theoretical argument of justifiable intervention. However along with that stance also come a number of hurdles for related empirical evaluations to be duly mindful of. In particular, if it were to be assumed that the IOF does react to the co-operative and fair-trade by shortening the distance between points A and B, then there is at least one theoretical suggestion encapsulated within that i.e. that, if a localised wage differential were taken to be a dependent variable, the estimations would serve to underestimate the effect of a co-operative and/or fair-trade. On that note, the extent to which an IOF reacts is the fundamental variable that is required to correct for that underestimation. Where that is the case, any statement of inference would potentially need to take into account the policy structure of the local co-operative. The reason being that, if the co-operative is operating optimal pricing and membership management, then there may be cause to accredit a proportion of non-members' income to the presence of the co-operative. In essence, one has to not just estimate the IOF reaction, but also disentangle from it what proportion of that reaction is due to the different managerial capabilities of different co-operatives. Specifically in the case of fair-trade, one may care to establish if membership costs have increased with

the winning of a fair-trade contract. Needless to say, these are hefty demands to place upon a dataset, especially as a well matched time series is unlikely to be available.

Having established an overview of this theoretical perspective, let us now inspect it more critically. Firstly, it's perceivable that this barometer of exploitation has less to offer in the more open economies of today than it did when the idea originally surfaced. Furthermore, the implicit assumption that the demand for membership is a decreasing function of cost may be a nominal rather than a real consideration, and as such, attempting to use the joining fee as a membership regulator raises some awkward issues. That is because, if a co-operative is sophisticated enough to adjust its membership fee in sync with membership demand and IOF pricing behaviour, then presumably the extra revenue from the addition to the fee is not destined to be wasted. An example of 'waste' in this context would be something such as an increase in real wages of administrative workers in the absence of there being any genuine economic reason or market pressure to do so. Therefore, assuming that explicit waste would not be a preference of policy, the extra revenue that is generated from an increase in the cost of membership cannot just vanish into thin air; feasibly those revenues should at some time surface as a form of return to members.

Alternatively, it may be the case that imperfect information distorts the perception of non-members such that they do base their decisions to join entirely on nominal costs and present period gains. However, even if that is the case, to leave behind those who feel they cannot afford to participate hardly encapsulates the spirit of what a co-operative and fair-trade are supposed to be all about. Moreover, consider that one of the strictest criteria of fair-trade certification is the 'free association of membership'. While this condition is tailored more to the avoidance of prejudice by factors such as gender, ethnicity and union membership, nonetheless there is still the potential for legal clashes relating to attempts to restrict membership. The overall suggestion being made is not

that attempting to regulate membership with altering fees is destined to fail, merely that it is not necessarily as straightforward a manoeuvre as it may appear on paper.

An issue that many will consider of greater consequence altogether, it may be argued that a one-dimensional exchange oversimplifies the problem. The framework from which Milford draws her analysis fails to adequately take into account that the quantity produced must be subordinate to the quantity that is demanded, and that the dominant market in that relationship is the export market. Along those lines, one may legitimately seek to enquire what the implications are of the export market being asked to accommodate this extra quantity (Qb). While at first blush the answer may seem painfully obvious, there are actually a number of supplementary factors to consider, not least that the profit motive of fair-trade intermediaries is apparently permitted to play its natural role. Hence, for the moment let us draw breath rather than conclusion. Milford's discourse is by no means unique in struggling with the thorny issue of oversupply; the final major entry of this section raises some of the same issues. For the sake of structural coherence, a more direct discussion of oversupply is postponed until Chapter III. Conducive to the flow of the discussion at hand we press on with a parallel perspective to Milford's.

Two overlapping papers, Hayes and Moore (2005) and Hayes (2006) portray the economic dimensions of fair-trade in a framework based on the Keynesian notion of 'aggregate involuntary unemployment'. The inclusion of the concept makes a valuable contribution to the literature in that it provides a truer representation of the rural predicament typically faced. Indeed, Hayes's preference for a Marshallian partial equilibrium model over a general equilibrium analysis (GEA) is derived from GEA's almost unbroken tendency to tacitly assume full employment. Rather, the situation at hand is one in which labour remains unemployed in spite of the market wage being in excess of the marginal utility of leisure. In other words, sacrifice of leisure time does

not enter into the behavioural equation in the way it does in a more advanced economy. To the contrary, leisure time is taken to be something people are positively disgruntled at having too much of. Recognition of this leads to the claim that the fair-trade premium does not necessarily engineer an inefficient allocation of labour because, in this circumstance it is not matter of drawing people out from one productive activity into another. Rather, it is about drawing from a pool of labour that is underemployed and involuntarily unemployed – largely inactive labour which does desire to be active at the current market wage. The situation is further aggravated by the tendency of employers (farm gate purchasers) to not have to compete over the prices they offer.

Accordingly, Hayes (2006) applies Pigou's (1932) and Robinson's (1933) theory of employer monopsony to the plight of the developing world's agricultural position – and by default to fair-trade. It is considered that a suboptimal outcome of allocative efficiency is the product of heavily asymmetric positions of bargaining power. It is hypothesised that fair-trade can foster the sort of local organisational competency required to counter this disparity. Essentially, fair-trade is seen as an entity that can enhance the competition for rural labour. Let it be noted that Hayes's chosen framework offers no definition of 'fairness' outside of the standard Paretian criteria. The subject matter of concern is that of evaluating the allocative efficiency of fair-trade, yet the author openly acknowledges that matters of distribution will likely require a more pragmatic response of theory and policy. Like Milford's paper, Hayes's graphical depiction takes the form of a standard monopoly/monopsony set-up, only this time more purely in the context of labour.

Figure 1.4 Involuntary unemployment and cloaked efficiency
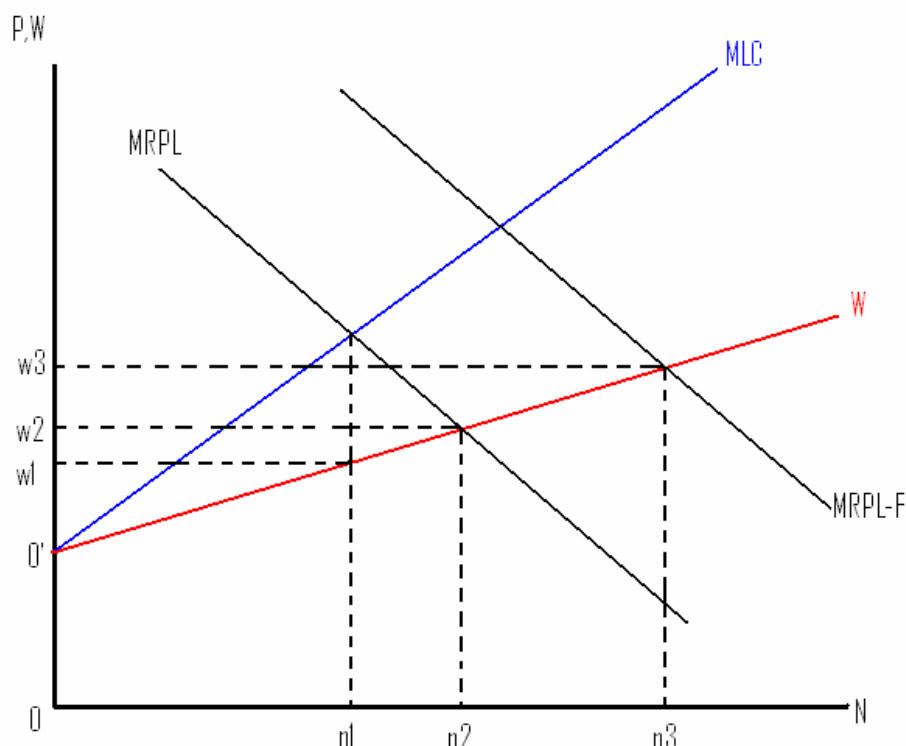
The schedule labels have been kept consistent with those of the original paper but to all intents and purposes they are identical to the ones that have been described in the discussion of Milford (2004). Where Milford labels the horizontal axis as quantity (Q), Hayes has it as the number of workers employed. For the time being, let it be accepted that those two entities are essentially equivalent to one another. The vertical axis is the same as it is in Milford (2004), price of the produce, wage of the labourers. W is the supply of labour, again relatable to the supply of produce.

The model is constructed so as to try to expose an illusion. The standard monopsony situation renders visible the presence of market power via the circumstance of employment (n1) at a depressed wage (w1). The illusion is that the competitive situation should be employment (n2) at competitive wage (w2). Whereas Hayes argues, (n2, w2) is actually not Parato optimal under conditions of involuntary unemployment, rather the MRP schedule at full employment (MRPL-F) is further out to the right. It is precisely as

a result of underemployment and involuntarily unemployment for which it is permitted that 'missing' labour be absorbed into the economy at no significant cost to any other sector. Therefore, the true Pareto optimal condition is said not to be (n2, w2) but rather (n3, w3). Hence the problem, as Hayes sees it, is not in trying to shift the outcome to (n2, w2), but rather pushing towards the (n3, w3) equilibrium.

An additional problem is identified as there being the possible presence of a *discriminating monopsony* – a situation in which producers are faced with a single buyer and at the same time subjected to different prices for the sale of identical goods. In the more traditional sense of the word, a 'market' will of course, by virtue of having numerous buyers and sellers under the same roof, provide a natural and time-honoured antidote for discriminatory pricing. Yet where infrastructure is poor and transport resources scarce, a discriminating monopsony may indeed be a predicament with which some farmers are faced. It is claimed that fair-trade can provide a means for solving these two problems by acting in a similar fashion to how unionisation or minimum wage attempts to remedy.
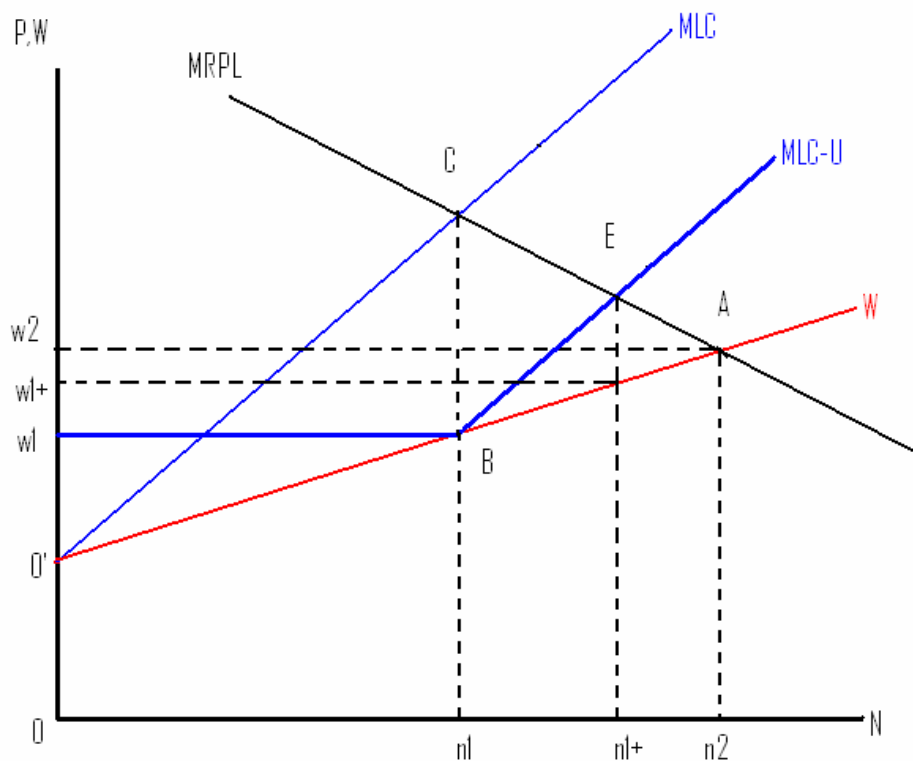
The 'intervention' (fair-trade minimum price) alters the marginal cost curve such that it shifts to the right and becomes perfectly elastic between the set minimum and the point where it hits the labour supply curve (B on MLC-U). As is visible by the horizontal section (w1 – B) of the MLC-U curve, the conditions of a discriminating monopsony are thus removed – or at least capped. A new equilibrium is now created (E), in which more people are employed (n1+) at a higher wage (W1+). Thereafter it is claimed that the controlling association (fair-trade, union, co-operative etc), would gradually 'ratchet up' the minimum price to an acceptable level.

Figure 1.6: Gradual increase of the minimum (wage) price ('ratcheting')
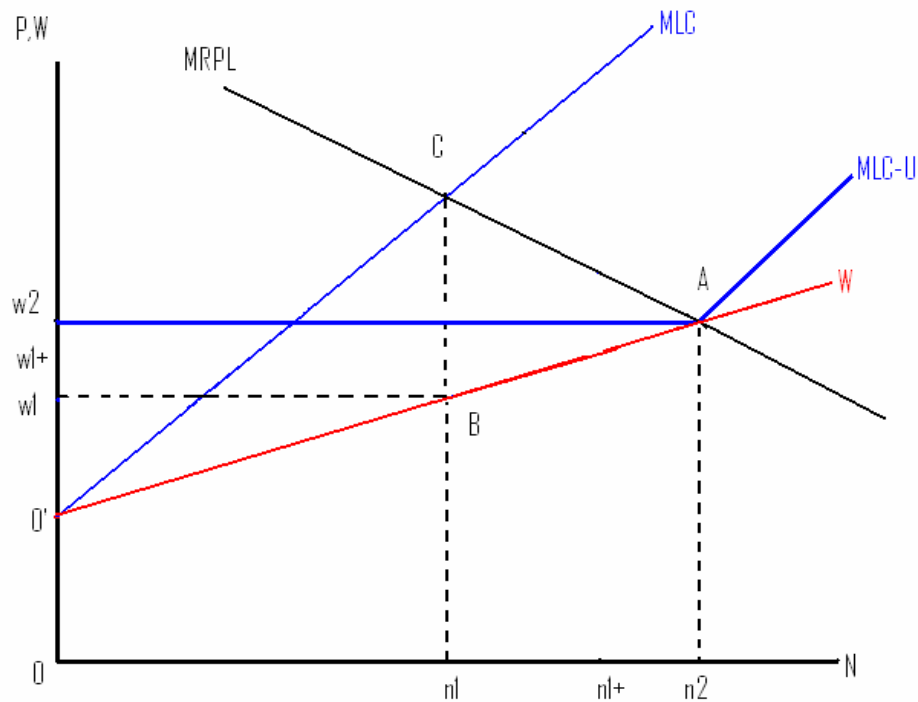
The above figure depicts hypothetical 'ratcheting' such that the minimum level has been pushed up to the competitive level (B→A, w2, n2). By way of the interests of non-members and employers (buyers) coinciding, the fair-trade collective is prevented from going too far with its demands. This conflict of interests ensures that neither a position of employer monopsony nor a position of fair-trade collective monopoly can make for a stable equilibrium. Hence the appearance of a potential avenue to independence affords Hayes a view in which the fair-trade consumer and the retail premium are neither necessary nor sufficient in the long run.

An initial criticism of this style of collective action might be that it depends very heavily upon the organisational discipline of its members. The classical trade-off manifests itself as 'the greater the numbers the greater the bargaining power of the group'. But, the greater the numbers the more difficult it can be to enforce discipline because the greater are the rewards for defection – classical game theory. At a local level, or perhaps stretching it to a regional level, this sort of action may at a push be

possible. Yet one may wish to question whether such an alliance could be forged and counted upon at the sort of global scale that would be required. Ultimately this minimum wage model of eventual independence does not appear to sufficiently respect the fact that competition in these agricultural commodities is extensively global. Looking at coffee for example, one does not observe any fair-trade deal for Vietnamese coffee, precisely because Vietnamese coffee growers are obliged to sell their output at a guaranteed set price to the state owned enterprise (McCargo 2004). This Vietnamese arrangement may be viewed as a component of a wider strategy of national industrialisation. The example of Vietnam may be more the exception than the rule, but it is especially significant to the coffee debate as Vietnam has become world's second largest coffee producer. Other nations generally employ much more subtle approaches than Vietnam, but it is hardly atypical as there are other developing countries which prejudice (i.e. negative protection) against their agricultural sectors in order to facilitate wider aims of industrial development. This is merely an example of just one of the barriers that conspires to hinder the sort of collaboration that would be a requisite of successful collective bargaining – rest assured there are many more.

A consecutive criticism as to whether or not this is achievable would be that a closer look needs be taken at what involuntary unemployment might mean for the elasticity of the labour supply. It is arguable that the presence of involuntary unemployment makes for a situation in which the labour supply schedule exhibits a duration of perfect elasticity (or at least very close to). A note to cement consistency: this may at first glance appear to contradict the previous assertion of agricultural supply being highly inelastic. To assimilate the claim that is being made here with the previously made claim of labour and its product being the proxy, one needs to accept the stance that there is a momentary divergence between the injection of labour and the supply of its product. To be as clear as possible: labour moves first (immediately if it is involuntarily

unemployed) and a lag necessarily precedes the harvesting of the finished product. What this says is that the quantities of labour and the quantities of its product proxy in the long run, but not the short run. This is how to reconcile figure 1.7 below with the previous statements about agricultural supply being highly inelastic.

Intuitively, the levelling should occur sooner (at a lower p, w) rather than later (at a higher p, w), and as such may place a cap on what a minimum wage (fair-trade price) can legitimately extract. This makes for an important consideration in terms of trying to reach the Pareto optimal point under conditions of involuntary employment (w3, n3). Figure 1.7 illustrates the issue that this suggestion gives rise to.

Figure 1.7 Involuntary unemployment with the possibility of perfectly elastic labour supply
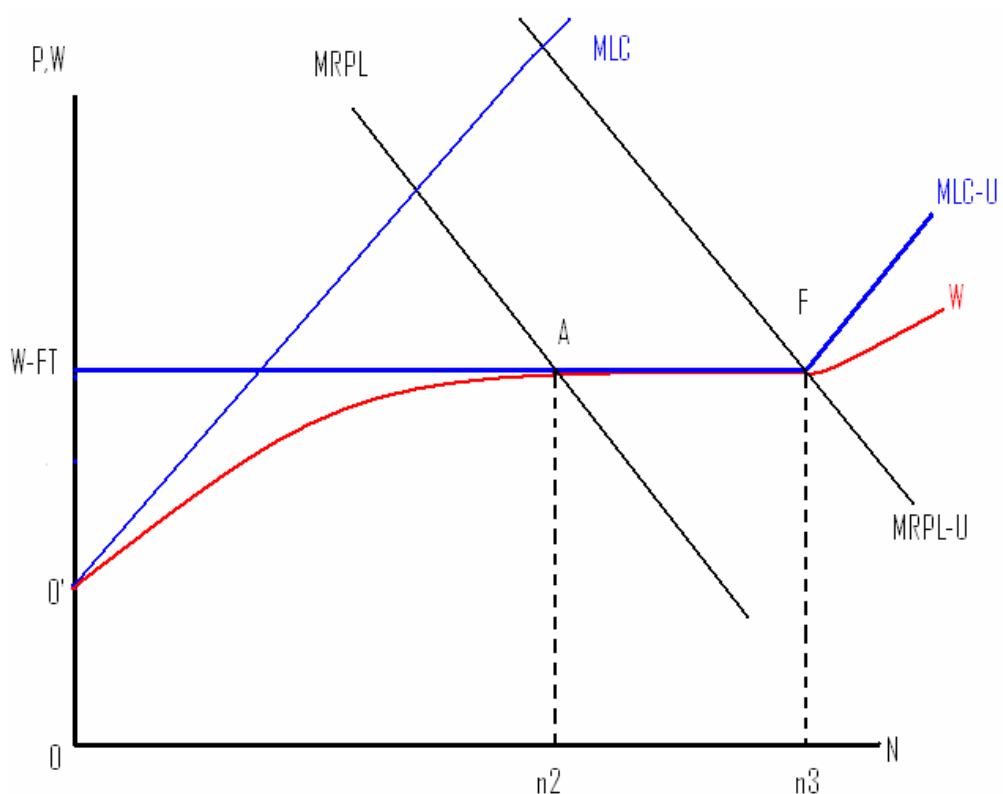
The fair-trade minimum price (wage) (W-FT) has been set at such a level so as to enable it to reach the competitive outcome under the assumption of full employment (n2, W-FT). However, if it is realistic to assume that involuntary unemployment allows for a sustained duration of perfect elasticity of supply, then the level very easily calls

forth those who are involuntarily unemployed. The noteworthy difference between Figures 1.7 and 1.6, is that Pareto optimality is theoretically satisfied by the same number of people being employed, but at a lower wage (W-FT < w2).

The duration of perfectly elastic supply will expire at some point of price and turn again to tend upwards. Equating point F with this secondary turning point of the labour supply schedule and the intersection of MRPL-U, indicates that any further increases in W-FT would solicit workers who are already involved in productive activities. If it is indeed the case that involuntary underemployment facilitates the existence of a stint of perfectly elastic supply, then the distance between A and F makes for an important consideration. It suggests that minimum wage 'ratcheting' may potentially call into action more labour than Hayes (2006) anticipates. So, bringing the condition of involuntary unemployment to the forefront of the debate makes for a valuable contribution to the literature; whether the agricultural sector is the best point of absorption for that labour is a more contestable matter.

This leads to a more central criticism of the model. Hayes, like Milford, seems to have given insufficient consideration to the ability and willingness of the export market to absorb extra supply and the likely effect that will have on aggregate prices. As will be discussed in more detail in Chapter III, there are a number of hindrances to ascertaining the presence of oversupply. Some of the key issues are that supply is global, productivity gains render equilibrium to be a moving target, and distortions are omnipresent and at times clandestinely packaged. As has already been noted, the fair-trade movement responds to this suggestion of oversupply by pointing to the fact that licensed traders are themselves profit makers (makers but not necessarily maximisers it's worth noting); they are subordinate to market forces and so they do not buy in excess of what they can sell. This is a credible enough answer. However, if it is accurate, it carries with it the implication that, unless demand is growing, the quantity

increases observable on the graphs of Hayes and Milford must coincide with either quantity decreases elsewhere in economy, or else appropriate growth in effectual demand. This in turn gives rise to the issue of trying to recognise the possible rearrangements of welfare that take place between participating and non-participating producers. It is precisely that reshuffle of welfare that Chapter III undertakes to simulate and evaluate.

Aside from the partial equilibrium set-up, Hayes (2006) contains further passing remarks that are uniquely relevant to the story as a whole. One such point is a response to the acknowledgment that children's education may suffer when the price of labour is temporarily high. In order to distance fair-trade from this detriment, Hayes falls back on the proposal that, "*it is typical of many low-income households that priority is given to children's education as soon as income rises above a minimum level*" (2006 p.7). This may intuitively be the case, but the importance of it is such that it is in itself a very worthy question to examine empirically. In conjunction, one may seek to enquire if producers perceive the incomes from fair-trade to be either permanent or transitory. It would seem reasonable to suppose that those whose perception leans to the former are better placed to convert their gains into something of future consequence.

A final remark on Hayes (2006) relates to his assertion that, "*It is precisely because individual households and local fair trade organisations do not possess such technology that they are unable to compete in the product market.........This analysis therefore suggests the main benefit of the fair trade partnership to the producer is in the process of investment in equipping local organisation with efficient technology.*" (pp 15-17). While there is logic in what is being said, careful consideration needs to be given to the category of technology in which the producer is being advised to invest. Technology associated with efficiency definitionally alters the input-output ratio in favour of the latter. And if each unit of labour is made to go further, holding constant the number

employed, supply increases. Labour-saving technology is of course not a grace to demonise, not at all, it represents productivity-driven progress. Seldom was a truer sentence spoken than Krugman's *(1990)* famous opening remark, *"Productivity isn't everything, but in the long-run it is almost everything."*.

Now, regarding the aims of fair-trade one need consider the medium term friction that might be associated with advancements in productivity. Fair-trade is no exception to all economic endeavours, in that if in the long run it ignores the need for productivity gains, it does so at the peril of the descendants of those it conspires to assist in the current day. It does at times appear that fair-trade struggles desperately to comprehend the intergenerational trade-offs with which it may be dabbling. It is the suggestion of this discourse that a carefully guided choice of technological investment represents the most effective way of excising the deeply embedded demons of the intergenerational trade-off. To be clear, when it comes to prescriptions of technology, one much be precise about what one prescribes, and think not exclusively of technology that economises on production, but in addition, consider technology that facilitates an ascent up (adjustment of) the value chain – one need differentiate carefully between these two. If an appropriate balance can be struck, it may grant the means by which fair-trade could stake a greater claim to effectively accommodating the intergenerational issue. Moreover, investments in physical capital must necessarily be accompanied by appropriate investments in human capital. By *appropriate*, what is meant is not merely that people be equipped with the capability of operating new machinery, or that their agrarian talents are enhanced. Rather, what is meant by *appropriate* is that workers be equipped with the sorts of skills that best place them to weather the restless winds of developmental progression. Equate those most vulnerable with the dignity and security of feeling that they have the ability to adapt should the forces of economic change demand they do so. The well trodden paths of development permit us to speak bluntly

on this: give to appropriate generations something they can potentially take to the metropolis of industry. The reasoning behind this is very simply that it is merely akin to requesting that all technological bets be sensibly hedged.

1.5 CONCLUDING REMARKS

From a review of the literature it would appear that a number of gaps can be identified. The developmental question of what it might mean to kowtow to agriculture at the potential cost of smothering the lure of the industrial wage is more a chasm than a gap. Truthfully, the speculative answering of a question as large as that, captivating as it is, goes far beyond the scope of fair-trade, and knocks more on the door of developmental and industrial policy debates. We obviously can't settle this, but will at appropriate moments usher forth commentary and evidence that adds some colour to that debate.

In more refined terms, this thesis will target three gaps in the literature, each of which takes as its primary focus the welfare a separate categorical actor: the consumer, the participating producer, and the non-participating producer.

The first and most apparent criticism of the available literature is that it is too awash with anecdotal evidence. While such testimonies add value and play a vital and informative role, the time has surely arrived where the vagaries and particulars must be cemented by the rigour of more systematic data. This is not just a matter of requiring additional substance, but equally of involving further balance. As has been detailed, some researchers have broken ground on this endeavour. It will never be a question of one definitive piece of evidence, but rather a matter of vindication by attrition. Accordingly, one identified gap in the literature is to gather further hard data and process it at a systematic level – the need for reports in which the data does at least as much talking as the researcher. Chapter IV of this thesis takes aim at that task.

Identification of a consecutive gap in the literature points to contentions that stem from the prospects and consequences of oversupply. The most basic of economic reasoning suggests additional supply will deliver a decrease in price – the polar opposite of what the fair-trade movement desires. Recognition of this opening is based not just on it being the most standardised and frequent complaint in the article informative literature, but also because some of the most dominant theoretical perspectives appear to struggle with this. By means that were discussed in the previous section, the fair-trade movement mounts what is 'in principle' a reasonable enough defence against it being associated with oversupply. It is certainly not inconceivable that fair-trade can be rescued from the cardinal sin of oversupply, however the by-product of a stay of execution is that, holding demand constant, an increase in the output of some producers must necessarily be met with a decrease in the output of others. With that tight corner in mind, Chapter III will put together a logical explanation of what this implies for possible welfare reshuffles between fair-trade producers and their non-participating neighbours.

A further understudied ingredient of fair-trade relates to the motivations on the demand side. In terms of human welfare, this aspect of fair-trade may be considered by some to be somewhat less urgent. Nonetheless, without consumption the concept goes nowhere, and so it is important to understand how this side of the relationship maintains the existence of fair-trade. In addition, exploring the demand side makes for a rounded picture in terms of *the overall* welfare effects of fair-trade. In a sense, we seek to comprehend and measure the interaction between disposable income and consumer psychology that underpins effectual demand for so-called ethical goods, and it is precisely to that endeavour that the next chapter now turns.

Chapter II: Measuring Altruism

2.1 INTRODUCTION

"Altruism is much more important in economic life than is commonly understood"

Gary Becker (1981, p.12)

Suppose a person wanders into a coffee house and is confronted with two beverage options, one of fair-trade and one, slightly less expensive, conventional option. The agent now has to make a choice between two physically homogeneous products, but not perhaps between two physiologically homogeneous products. Traditional economics may care to shy away from this distinction; behavioural economics on the other hand thrives on it. In order to absorb the clash between altruism and fairness, consider how Kahneman *et al*. appropriate the concept of fairness, "*The economic agent is assumed to be law-abiding but not "fair" – if fairness implies that some legal opportunities for gain are not exploited.*" (1986b, p.286). As the purchase of many fair-trade goods is generally associated with a price mark-up, fair-trade can, from the consumption side, be defined being a situation in which an agent forgoes a legal opportunity for monetary gain. It is by that reasoning that we equate fair-trade to altruism.

The most common stumbling block of altruism is that the giver receives utility in exchange for their endeavours, and so some would have us believe that the motive is soiled, and therefore by default the concept exists in denial of itself. This discourse subscribes to a view of the polar opposite. The claim is made that the utility motive purifies more than it pollutes; in other words, it is precisely a person's propensity to receive utility from benevolence by which we should rank and appreciate their generosity of spirit.

This paper attempts to construct a model of 'utility based generosity' as regards fair-

trade and altruistic behaviour. The usual problem in modelling such action comes by the way of income and utility having to move in opposite directions, and of the maximisation constraint being endogenous and unobserved. An attempt to sidestep those issues is made by viewing charity in terms of it being a request that is put to a potential donor, following which the person accepts or rejects the 'offer' to donate. Precisely because the offers are explicit and non-negotiable, the practice of 'fair-trade' resolves to be an accommodating medium by which to transmit this discussion. At first glance this appears to contrast with the more usual state of affairs in which the donor decides for themselves the amount that they wish to give. It should however by the end of this discourse be clear that the framework is generalisable such that it is able to encompass most if not all forms of altruism.

Some would argue that fair-trade is akin to charity and so it is erroneous to differentiate between the two. Others will insist that it is neither respectful nor accurate to refer to fair-trade as charity. There is substance behind both arguments, but it is a disagreement that this thesis makes no direct attempt to settle. It is however appropriated that fair-trade may equally be described as 'altruistic trade'. Terms such as 'charity' and 'donation' are employed for convenience and are in no way intended to pose disrespect to the concept of fair-trade. On a similar note, the term 'ethical consumer' will be used in relation to those consumers who purchase fair-trade goods. It is a matter of linguistic default that both of these terms, 'fair' and 'ethical' cannot escape the value-laden packaging in which they are wrapped. Yet, unreservedly, this discussion does not employ those terms in their usual normative dimension; the words are kept merely as a matter of convenience for the reader. Moreover, it will in fact be proven that there are circumstances in which a person with a relatively meaner disposition will be an ethical consumer, whist a person of a kinder disposition will refrain from that category of consumption. Hence the normative dimensions shrink to be

near meaningless.

To begin with, some of the literature on altruism is revisited. Piecing together the messages of that rich history leads to the tabling of a definitional framework unique to this discourse. Section 2.2 oversees the model acquiring its shape. In particular, 'generosity' is theoretically decoupled from the influence of income, such that we may look at how altruistic a person is irrespective of their income. As this is very much an information based model, some time will be taken to elaborate on the types of information that the model actively processes.

In Section 2.3 the common agents of the model are formulated and brought to life with some hypothetical numeric examples. Section 2.4 attempts to increase the model's sophistication by way of incorporating the purchase/acquisition of 'specialised' information as regards the effectiveness of the potential donation. The proof within is that informed choice always leads to superior levels of long run utility for the potential donor; this holds to be true even when the gathered information reflects negatively on the performance of the altruistic act that is being considered.

Penultimate to some conclusive remarks, an empirical design shall be offered by which to tout the framework's experimental potential. Methods are formulated such that the theoretical values of the previous sections resolve to be empirically identifiable. The outcome of this allows for income-neutral comparisons to be made between the different levels of generosity that various individuals harbour. It is intuitively speculated that the worth of being able to identify such a metric potentially holds value for furthering a quantitative understanding of that what is commonly referred to as a 'social consensus'.

2.2 REVISITING AND REDEFINING 'ALTRUISM'

The term 'generosity' seldom passes the eye of an economist in absence of a brow being raised – shamelessly so some might 'naively' say. For while it is the self-serving hand that goes most praised, still it would be a mistake to view theory of economics as being universally cold. *Homoeconomicus* is not without a heart. As a requisite of precision rather, the theory is merely a reflection of the temperature of the people it aims to comprehend. Hence in accordance with the balance that humanity itself does straddle, every behavioural discourse would be well advised to embody a mantra that goes like so: *People, they are the best of things and they are the worst of things*.

As far back as the classical underpinnings of economics allow, the existence of pure benevolence is a question that left Adam Smith at odds with his mentor Francis Hutcheson (Ridley 1996, p.21). Where the latter denied the *uncontaminated* existence thereof, the former considered the view of his teacher to be overly harsh, and ultimately an unjust mark of disservice to the patrons of altruism. Many a scholar may sympathise with Hutcheson's cynicism, but few capture it as eloquently as Michael Ghiselin does: "*Scratch an altruist and watch a hypocrite bleed*" (1974, p.247).

When it comes to a more contemporary engagement with the issue, economists appear almost unanimous in their decision to adopt the intertwined contexts of evolution and game theory. The former weighs in heavily and abides closely to the seminal contribution of W.D. Hamilton (1964) that is enshrined in the tenet that bears his name. The easiest way to ingest 'Hamilton's Rule' is by way of J.B.S Haldane's semi-serious joke (quoted from Boyd and McElreath 2007, p. 82). On being asked if he would sacrifice his life for another, his reply was that he would, but only for a minimum of two brothers and eight cousins. The reasoning goes that 'willingness of assistance' is based on the amount of common genes that the parties share, or more accurately, the associated likelihood that a recently a mutated (or rare) gene is present in the person that one is choosing to assist. In the sense of a recent mutation, the probability relationship

from a parent to a child is ½, a sibling ¼, and so on and so forth. Haldane's personal sacrifice does of course sum to one, the irony of course being that you only sacrifice yourself for yourself. In essence Hamilton quantified the degree to which one may expect blood to be thicker than water. This, quite literally, is what biologists refer to as 'kin selection'. However, considerable care needs to be taken in how one interprets Hamilton's rule (kin selection). Consider for example that humans and chimpanzees have in common more than 99% of their genes (King and Wilson 1975). We then quite easily share an even higher percentage still with all our fellow humans. Hence one lay interpretation of Hamilton's rule is that we should 'all' be bending over backwards to assist one another (prolific universal altruism). However, given that we do not observe such unbridled levels of self-sacrifice, how then are we to understand the percentile linkages that Hamilton's rule specifies? In clarifying the common pitfalls of interpretation, Dawkins (1979, p.12) qualifies Hamilton's assertions as so, "*Siblings may share 99 percent of their genes altogether, but only 50 percent of their genes are identical by decent, that is, are descended from the same copy of the gene in their most recent common ancestor.*" Therefore the answer to the question of why we observe kin altruism and not universal altruism can be put as so, "*kin altruism is stable against invasion by universal altruism, but universal altruism is not stable against invasion by kin selection.*" (Dawkins 1979, p.14). According to its eminent author that statement amounts to the best possible non-technical explanation of Hamilton's mathematical argument that he can muster.

Rejecting the species, denouncing the animal and replacing it with emphasis on the gene, as typified by Dawkins (1989), is a paradigm of remarkable scientific strength. One thing that should however be made clear is that referring to group selection as a fallacy does not entail the rejection of people (animals), or groups of people (animals), *appearing* to perform altruistic acts towards non-relatives. To appreciate the genetic

argument one must differentiate between 'effects' on the one hand and 'motives' on the other. Genetic programming is taken to work more as 'rules of thumb' (e.g. jump when you are startled). It does so happen that some of these rules of thumb make visible actions that we *socially encode* to be co-operative or altruistic (e.g. carefully warm the eggs until they hatch).

Determining precisely how parasitic or how symbiotic the relationship is between the entities of the gene, animal, species and the inter-species, goes far beyond the scope of this discourse. Yet, the fact that the social world is rife with examples of symbioses does grant some credence to the suggestion that, however biased the ratio, one would have some concerns in accepting it to be 1:0 (a pure corner solution), with no overlap whatsoever. For instance, it is surely no accident that nature has chosen pleasure (pure utility) as one of its primary vehicles for genetic proliferation (win-win between the animal and the gene). Or for that matter, if we were to take the aim of the gene as being straightforward proliferation, how could a pure 1:0 ratio of dominance be reconciled with the tendencies of better placed people to consciously opt for quality over quantity as regards their offspring – as is suggested by the well worn time paths of population pyramids (see US census bureau IDB)[7]. Admittedly, there is perhaps a fallacy of composition to be found somewhere in there. For, if everybody moves to increase their wealth by having fewer children, then a pending pensions and care crisis plays gently to the irony of developed countries becoming dependent on the labouring populations of their so-called less developed counterparts – inadvertently greasing an entropy based wheel of convergence perhaps. As one law of economics shamefully dictates, people

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[7] This appears supported by a 'developmental paths' perspective, but at the microeconomic level, theoretical stances (e.g. Becker 1965, Becker and Lewis 1973) hold up better than the empirics; the efforts of which have been hindered by problems of endogeneity and multicollinearity (see for example Augrist and Evans 1998).

tend to consider themselves wealthy only as long as the wages of others permit them to do so.

Placing the possible contradiction of development and low birth rates to one side, above that, simple 'non-related' friendship, and aimless charity offer themselves as occurrences that require an explanation outside of reasoning that is *purely* concerned with the selfishness of our genes. Ridley (1996) undertook to reconcile the tensions between the gene, the animal and the species, and it's worth noting that his work received the very public applause of Dawkins. To solve issues such as these, scholars, particularly game theorists, typically turn to *reciprocity*.

With multidisciplinary overlap, 'reciprocity' has surfaced as the most prominent decoder of altruistic cooperation. Setting the scene, I would wager heavily that few who read the statement which opens Smith's *Theory of Moral Sentiments* pass by uninspired. While the body of text is too lengthy to quote here, one may see that Francis Bacon summarises its message with flawless simplicity and elegance, *"Friendship, without which the world is but a wilderness[8]."*

The earliest explicit use of reciprocity as an explainer of social behaviour was probably extends to David Hume. In acknowledgement of a subsequent trail of continuous rediscoveries, Robert Aumann (1995) considered that engagement of reciprocity be regarded as folk knowledge[9]. Accordingly, his famous encounter with the concept became known to economists as the original 'folk theorem', a thesis from which much analytically rich research has subsequently been spawned. A simplified

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[8] Essay: 'Of friendship'

[9] From personal correspondence with Ken Binmore (UCL), I can affirm that nobody seems to know who was the first to produce something recognisable as this Folk Theorem. The credit however goes to Aumann because he appears to have been the first to have publicised its full significance. As such the (1995) reference for "Repeated Games with Incomplete Information' postdates Aumann's initial contribution.

explanation of this is; where backward induction of a repeated prisoner's dilemma renders that there is no difference between the outcome of a one-off game and the outcome of a multi-round repeated game, the original folk theorem formally tells us that many more Nash equilibria exist, (including that of cooperate-cooperate). This comes about provided repetition is accompanied by three important conditions. The first is that participants each play at least their minimax values. Secondly, each player must believe that there is a sufficiently high probability of there being at least one more game to follow the one that is currently being played. Thirdly, all moves must be fully visible to all players (i.e. no defection goes unnoticed).

The most explicit end to the 'rediscoveries' of the 'reciprocal policeman' occurred with the publication of Axelrod (1984). His widely celebrated computer tournament very publicly dragged cooperation from the lands of anomaly to the realms of clinical rationality. Moreover, with combined[10] contributions from George Price (1970, 1972) and Maynard Smith (1982) the literature began to appropriate the extraordinary concept of evolutionarily stable strategies (ESS). The emphasis on 'stability' does thus serve to reinforce the cardinal role of reciprocity. It has however been argued that pinning everything on reciprocity fails to explain the assistance that is given to one who is *unlikely to*, or unlikely *to be able* to, reciprocate. Yet, any arguments that demote reciprocity fail to properly recognise that the so-called limitations of Aumann's folk theorem actually work to overcome almost any qualms the detractor might have. As, by the requirement of defections being visible, we are informed of the real world truth that cooperation is far from the 'pair-wise' issue that some theorists have inadvertently taken (and modelled) it to be. The giving of assistance in circumstances of *no expected pair-wise return*, resolves to be a mater of 'reputation', and what is reputation but 'a

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[10] Referred to as 'combined' because Maynard Smith acted as a referee for Price and contributed a great deal in making Prices's heavily technical contribution comprehendible to non-mathematicians.

repetitively underlined signal.' In other words, nobody would want to be friends (form a coalition) with someone who abandons the friends they already have. The natural world is rich with examples (Trivers 1971, Wilson 1975), but in particular, the vampire bats studied in Wilkinson (1984) provide a fascinating and unambiguous instance of reciprocity enforcing non-genetic aid. On a night's scavenging some 8% of the bats failed to acquire adequate substance, and starvation would surely occur in the absence of blood sharing. Wilkinson observed that sharing occurred between bats that were *not* close genetic relatives, and that over the course of the game, the bats appeared to remember the 'culprits' that refused to share in past rounds, and subsequently punished them with a boycott in their own times of need (classic tit-for-tat).

Relating this to something more human, conventions such as the US military's policy of leaving no soldier behind makes for an illustration of a similar flavour. Risking the lives of many healthy soldiers to save just an injured minority appears to reek of *individual* irrationality – remember the soldier that you go back to save will probably never have the opportunity to directly return the favour. Yet from the macro perspective of the 'continuous group' it is a convention which makes much sense. As, by equipping the soldier with the expectation that 'somebody else' *of the same institution* would do the same for them, it perceivably ensures a less risk-averse military – which one may presume might well make for superior conquerors (ESS in a world of persistent conflict perhaps). Hence it can be seen that the condition of a 'continuously stable set' of players is not a requisite for having reciprocity play its vital role. Or, to put it another way, reciprocity recognises not just the person but the uniform. By which note, it would thus appear that Annam's folk theorem was far ahead of its time in the sense that its limiting assumptions paid early homage to the importance of reputation, and the related implication that altruism extends not just beyond non-genetic relationships but also embody a temporal quality.

Indeed, Bergstrom and Stark (1993) build a model that mixes genetic inheritance with 'cultural inheritance' and pose the argument that selfish people may be induced to act altruistically if they believe that their activities will be imitated by those around them. Within the model's predictions, 'maximisers' always end up doing at least as well as 'imitators,' but in families in which imitation is more probable, everybody does better. In a similar vein, Cox and Stark (1994) empirically and theoretically propose that, by way of a demonstration effect, parents have an incentive to let their children see them treating grandparents well, in the hope that their own children will follow the example. Thomas Carlyle could surely be forgiven for offering a wink from the grave.

Closely linked as they are to the force of reciprocity, the imitation and demonstration effect perspectives are sometimes touted as being paradigms challenging the more established economic explanation of the Bequest. A fine example of such is provided by Bernheim *et al*. (1985). With an impressive longitudinal dataset and thoughtfully gathered control variables, the authors show that the attention children give to their parents is strongly associated with bequeathable wealth. Complementary to the search for a strategic motive, the relationship disintegrates in single child families. The empirical evidence is strong, however one should bear in mind that the data is likely based on two generations. This in turn informs us that, by virtue of dissimilar time observations, this is a very different study to that of Cox and Stark (1994).

Supportive of the message from Bernheim *et al*. (1985), Lucas and Stark (1985) find strong empirical evidence to back up the presence of enlightened self-interest ('tempered altruism' as they term it), and pure self-interest in the influencing of urban–rural remittances. Leverages such as the aspiration to inherit, the desire to maintain home assets, and the itch to return home with dignity appeared to play an amplifying role. One interesting observation is the discovery of positive association between education and remittances, fuelling both a 'pay-back hypothesis' and the bold

suggestion that educated people retain closer ties with their families.

Taken together, the messages of such papers should not be interpreted as a demotion of pure altruism to the point of insignificance; rather the reader should appreciate that we are dealing with a number of complementary forces of different magnitudes.

Refocusing on the search for a classification, the traditional definition of altruism that Herbert Simon (1993 p.158) subsequently describes as 'useless', is "*Any choice that decreases the utility of the chooser while increasing the utility of the others*". Simon claims that the worthlessness of this definition is derived from the understanding that one may 'selfishly' donate all one has to charity – note the similarities with previously mentioned disagreement between Adam Smith and Francis Hutcheson. Evidently, for every unit donated the philanthropist receives at least one plus epsilon units of utility. Simon goes on to propose that altruism is better defined as a sacrificial transfer of 'fitness' rather than 'utility'. By this reasoning, the charitable donation is judged to be either selfish or altruistic simply by the effect the 'gift' has upon the progeny of the donor. He further implies that this is superior because, "*fitness arguments do not imply that the desire for economic gain is the dominant human motive*" (1993 p.158). This is a most insightful shift of direction, and one from which this paper will draw heavily in regards of the construction of its own definition. Nonetheless it must be called to account that the polymath appears to have heavily undervalued the term 'economic gain'. While moving from utility to fitness stands the perspective in good stead, Simon still appears to skip over the likelihood that the fitness of the offspring will be of future benefit to the original donor; as will soon become clear this is a convention which had already been established in earlier papers. A predated flavour of the explanation that this discussion is gravitating towards can be put simply as "*altruistic families have more insurance*" (Becker 1981 p.4).

It is arguable that the gap in Simon's reasoning stems from him failing to appreciate

a key relationship that economists (often implicitly) hold to be self-evident i.e. that the term 'economic gain' is encompassing of far more than capital acquisition. It is true that wealth poses as a near perfect instrument in the economic definition of fitness; for an individual, household, firm or country, capital accumulation represents resilience and a strong (but not exclusive) means to acquire most other components of economic fitness. However, in defending the broadness of the term 'economic gain', one may recall that the erroneous belief that wealth consists of precious metals constituted the cornerstone of Adam Smith's assault on mercantilism. Where do things now rest in a more contemporary setting of economics? Well, in particular, modern inquiry does also hold that the accumulation and passage of knowledge is of *at least* equal importance to capital accumulation. It is the opinion of this thesis that, the origin, and continuance, of wealth is knowledge based.

The old idiom that 'a fool and his money are easily parted' comes to mind, and one may consider how an expression such as that is relevant not just to an individual but equally a nation state. For while monetary wealth represents choice, knowledge represents 'statistically superior choice' and thus knowledge does itself facilitate the continuance of capital accumulation, health and (arguably) utility. Economists care only for money per se in so far as they care for the institutional means that cuts and preserves a path to a sighted end, for they, like Lenin, recognise that to *overly* erode the 'store of value' is to spike the Achilles' heel of progress. So, for the neglect of non-genetic assistance (friendship), and for failing to appreciate that the term 'economic gain' equates to more than just utility or capital gain, Simon's (1993) arguments appear somewhat unrefined in comparison to some earlier contributions.

In particular, almost two decades before, Becker explicitly incorporate fitness into his model by way of taking the price of goods which are used to alter fitness as being the "*shadow price*" of fitness (1976 p.832). The ability to pay the price is then deemed

to represent access to fitness. Across three related papers, (1974, 1976, and 1981) Becker formulates and comments on a model in which altruism is shown to be efficient in a family environment, but inefficient in a market setting. The model revolves around his simple but extraordinary 'rotten kid theorem' and is based upon the dependent's recognition of collective fortune within a small closely knit group. Just prior to indulging the theorem, it is perhaps worthwhile reminding ourselves of something one 'so-called' high-priest of individualism once wrote, "*The ultimate operative unit in our society is the family, not the individual*" (Friedman 2002 p.33).

The story of 'the rotten kid' is one in which a selfish dependent rejects the opportunity to increase his own income if the gains come at the expense of his family's social income – siblings included because they are linked by a common benefactor. So why then is the kid rotten? He is rotten because his actions follow enlightened self-interest, he is wary of damaging the utility of the benefactor and plays by the crafty understating that the benefactor views her children's utilities as being superior commodities. The 'nice' outcome revolves around a desire for harmony in production (family income and parental utility) so as to best maximise distribution (the child's income).

Becker's theorem predicts that rotten kids will only act rotten if their parents are rotten. Such a statement is of course rather bold, as it highlights certain *interpretative* pitfalls that some will claim fail to nestle comfortably into the real world. For example, from a myopic perspective it panders to the suggestion that richer parents are better placed to raise children who are not rotten, and less well-off people are at a natural disadvantage in parenthood. While this may not be an out and out mismatch, we know from what we see that behaviour is lot more mixed than that. However, I argue that mixed behaviour does not scupper the theory. It should serve to remind us that economic theory is seldom suitable for too literal an interpretation; we must constantly

be aware that *ceteris paribus* is as much a limitation as it is a sought-after jewel to admire. Becker's definition of 'a rotten parent' is, I believe, not a monetarily poor parent, but rather a parent whose propensity to feel utility from the utility of their children is sufficiently low. Moreover, while 'income' is the economic transfer that Becker uses to explain parental benevolence, substituting a non-monetary transfer of fitness (e.g. 'quality time') in place of money can put to rest the lame interpretation that poor parents are at an out and out disadvantage. Again, recognising that a substitution of 'time' for 'money' poses no inconsistency for how this paper is opting to comprehend the term 'economic gain' (economic transfer), should serve to reinforce the 'devaluation criticism' that has been tabled in response to Simon's (1993) employment of the term.

Ultimately, for Becker, altruism prevails in the family, and not in the market due to reasons of relative efficiency. The altruistic transfer is efficient in the family because, simply, the donor gets more utility for her money than she does in the impersonal market place. Put another way, envision two concave utility functions with altruistic transfers on the horizontal axis, and recognise that the curve for the family (or those close to us) is steeper and turns at a higher point. To put it as bluntly as Becker does, "*the scarce recourse 'love' is used economically*" (1981, p.5).

Very much in line with the message of Becker's contribution to the literature, albeit under quite restrictive assumptions, Ishikawa (1975) formulates an elaborate model that shows how the children of altruistic parents fare better in the labour market. The reason for this relates to benevolent parents being more prone to invest in the human capital of their offspring.

Taken together, utility alterations, fitness perspectives, the cardinal role of reciprocity and the required expectation of another game, combine to allow for the generation of a more refined definition of altruism. Fitness may be a more linguistically legitimate component of sacrifice than utility. However, given that money can be used

as a near perfect instrument by which to bridge the acquisition of the two, we needn't tear ourselves to philosophical pieces in deciding which to use. I suggest the term 'economic transfer' be properly recognised for the full array of variables that it is. This paper makes the argument that 'economic gain' (stock increase) is comprised of two separate but potentially overlapping entities; fitness and utility. 'Economic stock' can itself be comprised of both utility and fitness, else it can be a package that contains either or both of those two entities. The problem on the surface is that transactions that are undertaken between these two entities lack a common unit of account. Money comes close, but because of the inverse relationship between consumption and savings, it is not wholly satisfactory. The more fundamental problem – that is both cause and consequence of the unit of account problem – is that fitness and utility as a pair have the propensity to move in either the same direction or opposing directions. The idea to incorporate fitness into the definitional framework owes much to Simon (1993), However, for the criticisms that were outlined above (i.e. non-generic assistance and the procreative patters of better placed people), we must deviate from Simon's definition of fitness, "*The number of progeny an individual produces or, for a species, the average number of progeny of members of the species* (Simon 1993, p.156), and replace it with something that economists would be more inclined to describe as welfare. From this point on, this discourse shall subscribe to a definition of fitness that goes as so: *Fitness is anything that increases an agents ability employ their recourses in such a way so as to add to the 'economic stock' that they already hold, and as such also strengthens the agent's ability to deal with any exogenous (unplanned) shocks that they may incur along the way.* The inclusion of the latter part of this definition is designed to accommodate the instance that in times of negative shocks, 'maximisation' is akin to 'loss minimisation'. This '*ability to weather the storm*' connotation of fitness is included in order to pay direct homage to 'knowledge' being a prominent economic

good.

The resemblance of my definition of 'fitness' to what some would term 'welfare' is more than academic; but for my insistence of utility being thought of separately, I record no distinct difference between the two and would raise few qualms with any who choose to use 'fitness' and 'welfare' interchangeably.

This discourse will however stick predominately with the term fitness for a number of reasons; firstly because the idea of stepping aside from just utility stems from Simon (1993), and secondly because it is considered here that "*Economic wealth and biological wealth are thermodynamically the same sort of phenomena, and not just metaphorically*" (Beinhocker 2007 p.317). This in turn meets well the requisite of dynamism with respect to the agent's ability to adapt to changing circumstances – as opposed to 'welfare' which has a much more static feel to it. Accordingly, the same circumstance of perfect inter-changeability cannot be extended to utility and fitness and, by default, utility and welfare. Ng (2004) offers numerous examples in which welfare and utility can be deemed to move in opposing directions, which is the crux of what I will later refer to as the '*no common unit of account problem*' in economic stock.

An understanding of the fluctuations of 'fitness and utility' that are associated with 'saving and consumption' behaviour can provide a vehicle for refining one's comprehension of the no common unit of account problem. At the same time this breaks trail for the definition of altruism that this discourse is steadily gravitating towards. Saving is generally associated more with fitness than utility. At first glace this may draw criticism via the suggestion that a person may very well gain some utility from having the security of some money in the bank. That is not being disputed here; the definitional outline does not at all preclude it. All that is being requested is that the reader appreciate that saving is *predominantly* a fitness-enhancing operation, one that places enhanced utility inside the bracket of 'tomorrow' (inter-temporal optimisation,

investment in future utility). As such, even though there may be some utility gain, the acquisition of fitness by saving is still likely to involve a net opportunity cost of utility in time period t=1.

An inversely similar story exists as regards consumption, one where consumption is *predominantly but not exclusively* biased towards utility. While in the long run most non-autonomous consumption prejudices towards utility, some consumption will be geared towards fitness rather than utility. Consider for example investment in one's own human capital; again, as with savings, this is not to deny that a person might experience utility from 'learning' but merely to principally associate it with a significant opportunity cost of utility in the current time period. It may thus be argued that, paradoxically, some forms of consumption bear a closer resemblance to saving than to consumption per se, and vice versa. This twist may be observed in realising that while this discussion has deemed saving to be chiefly associated with fitness at the opportunity cost of current period utility, excessive saving can itself also be associated with an opportunity cost of fitness – precisely because the person may forego the act of consumption which is associated with investment in their own human capital.

For the purposes of this thesis, it's enough to simply remark upon the imprecise fit of the 'fitness-utility' balance with the 'savings-consumption' balance; it's the most fundamental way of illustrating the 'no common unit of account' problem. However, one may in one's own time care to ponder what implications the imperfection of that fit might herald for consumption theory as it currently stands. My own feeling is that there is the potential birth for something new in one of oldest and most fundamental puzzles of economics, and that it helpfully tears tare a bit at the barrier that *supposedly* separates microeconomics from macroeconomics.

In accordance with the framework that is in the process of being laid, definitions take shape as follows: when money is donated, the donor gives away fitness and gains

utility, while the receiver in that transaction initially acquires both fitness and utility. It is important to note that the definitions, as formalised in Figure 2.0 below, are concerned with first round conditions. What the receiver does with the money after it has been donated is a second round condition and as such is not the definitional concern of this paper – depending on their own preferences and circumstances, they may later divide it up between any possible combinations of fitness (predominantly savings/investment) and utility (predominantly consumption). All that we are formally interested in is *the initial change* which is that the donor exchanges fitness for utility and the receiver acquires a moment of both utility and fitness. This breaks from Becker's assertion that, "*Altruism does not by definition necessarily reduce personal fitness*" (1976, p.824), but that is because Becker is dealing predominantly with the family, and he is recognising it as an autocatalytic unit. A state of affairs in which economic gain is bidirectional and repartition of fitness occurs with a reasonably high probability (but not p=1). However it must also be appreciated that, while utility transfers are relatively smooth and straightforward, transfers of fitness are more lumpy and temporal. For the family, say, the parent customarily gives everything in the beginning, and gradually over the years things level out and perhaps finally the reverse might be true in the twilight years of the parent (think time and energy not just income). Of equal recognition should be that a wider model of altruism must incorporate circumstances in which no fitness will ever be returned, or at least account for situations in which the probably of fitness being returned is sufficiently close to zero.

To deal with this, and to formalise what is being said, it is suggested that we hold in our minds the master category of 'altruism', and define two subgroups within it, *Pure Altruism* and *Normal Altruism*, and one residual subgroup, *Pure Self-interest disguised as Altruism* the group membership of which some might care to question.

FIGURE 2.1 FORMALISED ALTRUISM

Altruism: A giving to B

Pure Altruism

$$^{A}U + {}^{AB}U_{t=1}$$

$$^{A}F - {}^{AB}F_{t=1}$$

$$E(^{BA}F_{t=1+n}) = 0$$

Normal Altruism

$$^{A}U + {}^{AB}U_{t=1}$$

$$^{A}F - {}^{AB}F_{t=1}$$

$$E(^{BA}F_{t=1+n}) > 0 \text{ or } E(^{BA}F_{t=1+n}) > 0 \ (if \ ^{A}F_{t=1+n} < x)$$
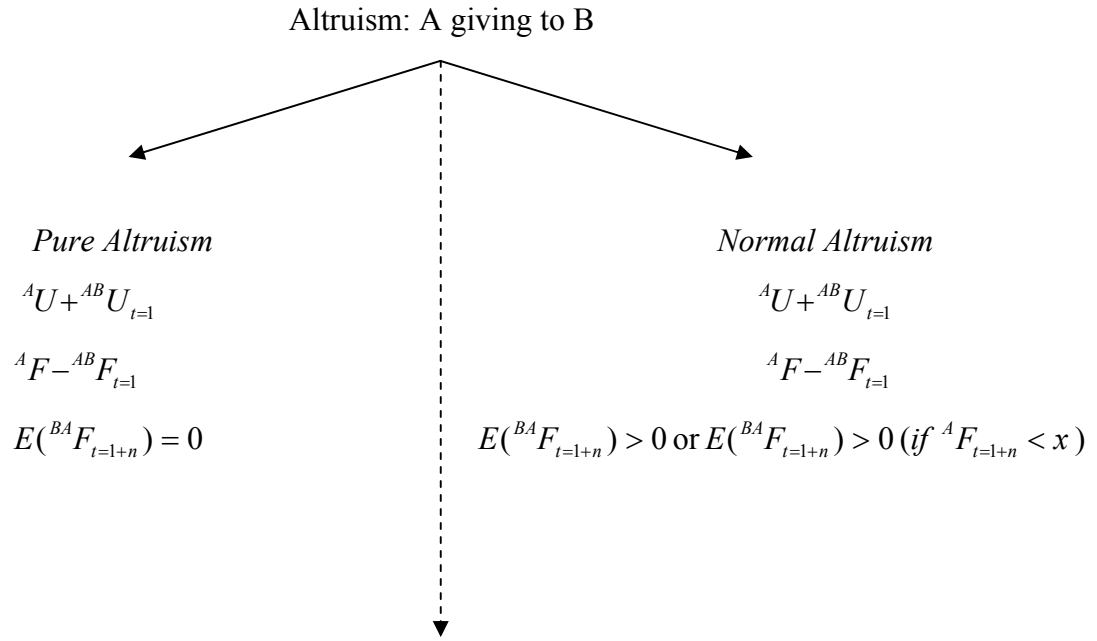
Residual subgroup: Pure Self-interest disguised as Altruism (SDA)

$$^{A}F - {}^{AB}F_{t=1} = {}^{A}U - {}^{AB}U \Rightarrow {}^{A}F = {}^{A}U$$

$$E(^{BA}F_{t=1+n}) > {}^{AB}F_{t=1} \ or \ E(^{A}F_{t=1+n}) = {}^{A}F_{t=1} + {}^{CA}F \ where \ ^{CA}F_{t=1} > {}^{AB}F$$

$$\therefore E(^{A}F_{t=1+n}) > {}^{A}F_{t=1} + {}^{AB}F_{t=1} \Rightarrow E(^{A}U_{t=1+n}) > {}^{A}U_{t=1} + {}^{AB}U_{t=1}$$

U indicates utility; F indicates fitness; C represents any 3rd party which observes the altruistic act. x represents a mayday level, by which if the person's fitness falls below that level (x), it is then expected that past beneficiaries will provide compensatory fitness. The sequence of the northwest superscripts indicates who is giving to who; the first character is the donor, the second is the receiver.

The first case is 'pure altruism' (at least as pure and pure can be – utility gains are always present). Pure altruism can be defined as being an economic donation to a person whom the donor never realistically expects to ever receive any reciprocal assistance (fitness) from. The fair-trade consumer and general activities of charity fall into this category. The second is 'normal altruism,' and this can be defined as being an economic donation to a person whom one does expect that there is a significant probably of receiving future assistance (fitness) from, or at least that assistance would

be forthcoming if it wherever called upon in the future – a blank cheque in case of an emergency $E(^{BA}F_{t=1+n}) > 0 \, (if \; ^{A}F_{t=1+n} < x)$. One could arguably demand further precision by requesting that a stricter theoretical distinction be made between those that expect a future return irrespective of their own future level of fitness, and those that only expect one in certain circumstances of personal loss. Mixed family behaviour will be highlighted later, but for now it is sufficient that these two instances be grouped together under the banner of 'normal altruism'.

A twist of language may be helpful in making formula arrangement more intuitively digestible. The 'expected value' term is used; taken clinically this is of course literally something we 'anticipate' to observe above other possibilities. However, say in the case of family altruism, some will understandably refute this 'expectation' and insist that they 'expect' nothing in return from the kindness they bestow upon their children. So, instead, say in the case of $E(^{BA}F_{t=1+n}) > 0$ and $E(^{BA}F_{t=1+n}) > 0 \, (if \; ^{A}F_{t=1+n} < x)$, where person A is the parent and person B is the child, one may prefer to read it as 'I would be '*very surprised*' if my children refused me any assistance at all in the future, and especially so if I fell on hard times'. One who is more intimately acquainted with statistics might object to the replacing of 'expected value' with 'surprised not to get', on the grounds that nothing has been mentioned about the variance; as it is of course possible to have an expected value far from what one actually expects. Nonetheless, noting that the binding condition is nothing more than a very broad inequality (>0), the suggested turn of phrase is sufficiently valid.

That which has been labelled 'normal altruism', some might understandably prefer to call 'enlightened self interest', 'strategic altruism', or similar. There is an air of validity in all of these. However, to avoid confusion with the area labelled as 'self-interest disguised as altruism' (SDA), this thesis has refrained from employing labels such as those. Undeniably, there is a strategic element to both normal altruism and

SDA, but the main difference is that the normal altruist is not a cold accountant as regards their expectations of returns. In contrast, the SDA player only acts because in the long term he expects to be given back more fitness than he originally paid out. It is the motivation of a net 'transfer gain' that drives his actions.

This leads us into a complex area of motivations, because saying that the expectational conditions exist is fine for categorisation, but it might not be fine for declaring to which category a particular action belongs; this depends on whether or not the expectations (motivations) are strictly binding. If the conditional expectations are not binding, then the act falls into the category of pure altruism because looking again at the expectational condition of pure altruism ($E(^{BA}F_{t=1+n}) = 0$), we realise that literally nothing is expected of the receiver.

Realising people's motivations and whether or not they are binding is of course another matter altogether. We can however illustrate what is being implied via a hypothesised world of truthful answers. Consider, for example, the scenario of a family tending a young infant. The question could be put to the parents, "Do you expect that when your child grows up she will assist you in any way at an expense to herself in the future?" (Remember the broadness of the economic stock definition; think of time and energy, translating into sacrificial fitness and/or utility, not just money). Alternatively, in terms that are perhaps more intuitive to everyday life, "Would you be surprised if in the future your children offered you no assistance at all, even in the event that you fell on hard times?"

One may speculate that the honest answer of the parent would be to confirm those expectations. Admittedly there is a speculative value judgement embodied in these hypothesised answers. Ultimately it is up to reader whether or not they accept them; self-evidently I believe them to be intuitively sound or I would not pose them – ditto the ones that follow.

Acceptance of that reasoning deems that the expectational condition for normal altruism has been established, ($E(^{BA}F_{t=1+n}) > 0$) and/or $E(^{BA}F_{t=1+n}) > 0$ ($if\ ^{A}F_{t=1+n} < x$). A subsequent question is then posed, "Would you *still* care for your child if you knew *for sure* that in the future she would not return any of the care or kindness you would bestow upon her?" Given that the child in question is at a helpless age, one would expect the parent to answer that they would not withdraw their aid, in which case, although the expectational condition for normal altruism exists, it is not binding, and so the actions of the parent may well be better placed into the category of pure altruism, ($E(^{BA}F_{t=1+n}) = 0$).

This is a straightforward enough scenario to anticipate; it is after all a parent and a vulnerable relative. However, skipping on many years to when the child is no longer a dependent, we *might* expect that the expectational condition of normal altruism will potentially become properly binding. Indeed, implicit empirical support for offspring being fearful of this is given in Bernheim *et al*. (1985). In this case, it may be argued that the altruism within a family comprises a mixture of both normal and pure, perhaps heavily split along the lines of generational dependency and exceptional circumstances. Yet, outside a world of theoretical questions and hypothesised answers, things can be much more difficult to gauge, and we are generally forced to rely on *revealed* signs and intuition to inform us. Money *anonymously* dropped into a charity box, is of course a sure enough sign of pure altruism, because the chances of the donor and the recipient ever meeting is close to zero. However, there are other less clear-cut situations in which one may find it difficult to identify the expectational condition and whether or not it is binding, for example if what looks like a donation of pure altruism takes place, but thereafter the donor goes out of her way to advertise the donation. If the donor can only

possibly receive extra utility from advertising[11] his donation, then we are still in the context of pure altruism. If on the other hand *the loud donor* stands to have some of his fitness repatriated to him, then this is likely to be normal altruism, but if the donor explicitly aims to gain a return of fitness in excess of what he donated, we may then rightfully deny that this be categorised as any type of altruism at all and place it in the residual category (SDA) – our altruist has been scratched and our charlatan is bleeding. So, with something like fair-trade, the consumer is engaging in pure altruism. However the retailer that employs a PR department to announce to all its involvement in fair-trade is unlikely to be a normal altruist; it is better placed under the label of SDA.

It was indeed this 'retailer perspective' that motivated the inclusion of the SDA script on the altruism diagram above. On this note, the script hypothesises that the player does not differentiate between utility and fitness ($^{A}F - ^{AB}F_{t=1} = ^{A}U - ^{AB}U \Rightarrow ^{A}F = ^{A}U$), and also that the repatriation of fitness can come via third parties '*c*' who were not involved in the benevolent-looking act. If SDA were to be stated for an individual rather than a business, the 'fitness equals utility' assumption might have to be amended.

To summarise, every act of altruism, pure or otherwise, involves a non-zero sum economic transfer. The recipient receives both utility and fitness, the giver receives utility and, for at least an instant, loses fitness. Under pure altruism, the giver considers that the fitness will never be returned. Under normal altruism, the giver recognises that there is a reasonable probably of some, but not a binding amount of, fitness being returned to them in the future, or at least that some can be called upon if a fitness requirement materialises. The magnitudes of loss and gain are circumstantially dependent. The next section attempts to model this, and in doing so goes against the

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[11] Similar to what Ariely refers to as "reputational utility" (2008 p.237)

suggestion that altruism is not altruism because the act is contaminated by the giver receiving utility – to the contrary, the more utility the person can experience by giving, then the more altruistic is that person.

2.3 THE MODEL AND THE INFORMATION IT EMBODIES

For the sake of coherence and approachability, the model is initially put together as if there is no distinction between the general and the specific; Section 2.5 abandons this tool of simplification. The story revolves around a simple utility function that can, for now, take one of two forms. It is stressed from the onset that the utility parameters are ordinal rather than cardinal.

$$U = (\Omega_p + \Omega_t) + \Theta \quad \text{or} \quad U_{FT} = (\Omega_p + \Omega_t) + (\pi - R) + \Theta$$

Letting $\Omega = (\Omega_p + \Omega_t)$

$$\therefore \ U = \Omega + \Theta \ \text{ and } \ U_{FT} = \Omega + (\pi - R) + \Theta$$

Ω_p and Ω_t are nominal income variables, which respectively represent permanent and transitory income, as seminally identified by Friedman (1957). Regarding this and considering some of the more classical literature on utility, one may make the assertion that income belongs to the function more as a constraint than as a component. The reply to this is that the difficulty in modelling charity is precisely that income is not the effective constraint with which the utility-maximising individual has to contend. Also, including Ω in this manner serves to give the reader an intuitive feel for the utility functions themselves – especially in relation to the negative R. In addition, as the first derivative of U with respect to Ω is positive, it's not at all incorrect to display Ω in this fashion. *R* represents the value of what is given away; the gift, the donation, or the fair-

trade mark-up. Θ is everything else that impacts a person's utility and will be held constant in this model. It is Θ that allows the stated income variable to be nominal rather than real as it saves us trouble by silently taking into account two important things; utility changes that result from actual purchases, and the changing value of income with respect to changes in price.

π along with its Z component resolve to be the central variables of this discussion. π can be described as being a person's '*income-dependent* charitable disposition'. Z captures all that is circumstantially benevolent about an individual *irrespective of income* and will be discussed in more monetary based detail.

$$\pi = Z\left(\frac{(^{fr}\Omega_p)}{R}\right)$$

$^{fr}\Omega_P$ is net permanent income associated with the frequency (*fr*) with which a donation is requested. For example, if we are considering annual income and a charity asks, "Will you be willing to commit to donate x amount of money per month?" Then $^{fr}\Omega_P \Rightarrow {}^{12}\Omega_P$ which means we are considering the permanent component of a person's net monthly salary. There are other contenders for the income variable that one may wish to consider, for example disposable income, a PPP weighted income variable, or likely a combination of the latter with permanent income. However, for reasons of tractability and coherence of explanation, let us for the time being just refer to our income variable as permanent income.

In the construction of π, as crucial a parameter as it is, Z can be described as a person's '*income-independent* charitable disposition'. Z is an ordinal measure by which to compare people's kindness *irrespective* of their income. Strictly speaking, Z is only income-independent for 'normal' changes to income. That is to say, some 'big income

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shocks' can, via an endogenous transmission mechanism (e.g. self-esteem), exhibit influence on Z. In theory $Z \geq 0$ because there is no cap that can be put on a person's ability to experience utility from giving things away. In extreme circumstances it's possible $z \to \infty$, say for example in the giving of all one has in order to fund the lifesaving operation for a loved one. However, excluding such extremities, circumstantial Z is deemed to predominantly occupy a range of $0 \leq Z < 1$. The empirical setup in Section 2.5 will attend to this. The higher the value of Z, the greater the individual's ability to 'feel good' from undertaking activities such as helping a friend, buying a fair-trade good, giving a gift, or making a donation to charity. If a person could never possibly receive a single drop of utility from giving away anything to anyone, this is encoded as Z = 0. From the formula it can easily be seen that π is an increasing function of Z and $^{fr}\Omega_p$, whilst being a decreasing function of R. The partial derivatives line up as follows:

$$\frac{\partial \pi}{\partial Z} > 0 \qquad \frac{\partial \pi}{\partial^{fr}\Omega_p} > 0 \qquad \frac{\partial \pi}{\partial R} < 0$$

A graphical depiction can hopefully add some clarity to the equations.

FIGURE 2.2 THE BENEVOLENCE CURVE
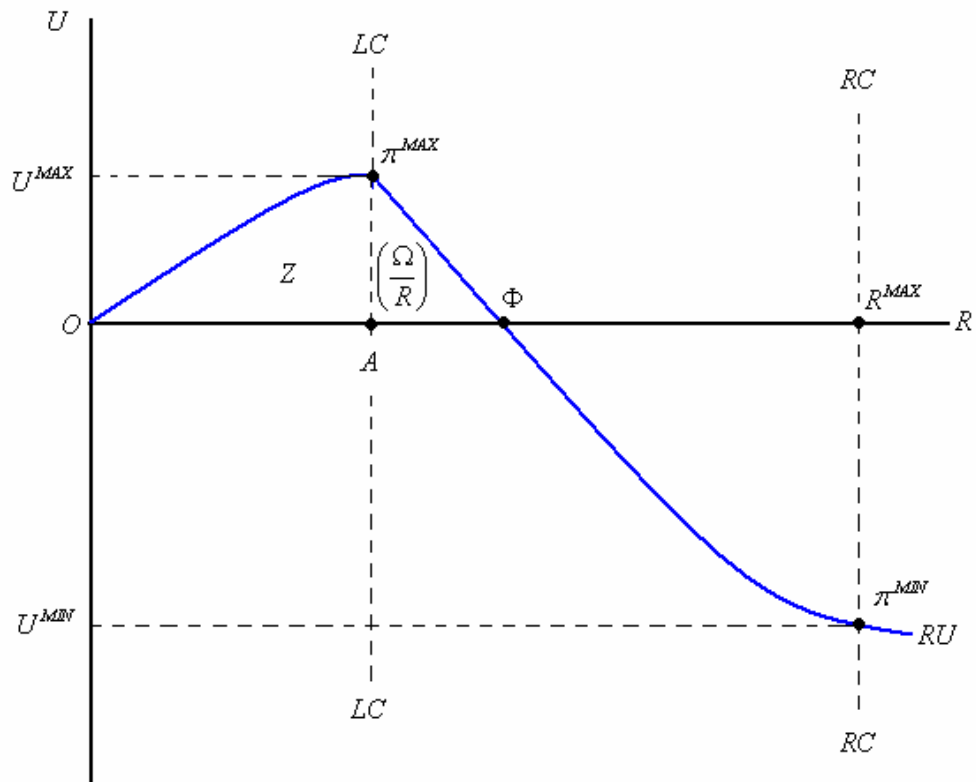
* At a better scale the triangle $\Phi R^{MAX} \pi^{MIN}$ would be far larger than $0\pi^{MAX}\Phi$ and $A\pi^{MAX}\Phi$ would be far larger than $0A\pi^{MAX}$.

The vertical axis measures utility (U) and the horizontal axis measures the value of the donation (R) (reduced fitness). Hence the line RU represents utility with respect to donation. The individual can end up with any range of utilities between U^{MAX} and U^{MIN}, however as charity is choice based, the person is not going to choose negative utility, so they will end up receiving a level of utility between 0 and U^{MAX}. RC is technically the 'real' constraint, in the sense that a person cannot give more than they have even if they wish to. Therefore, with the exception of extreme circumstances, RC does not enter the equation in any meaningful way. As was previously mentioned, the main problem with modelling the situation of charity is that the constraint is endogenous and largely unobserved. This renders that one is prevented from making use

of the standard Lagrangian method by which problems of constrained maximisation are typically solved. The multiplier would usually serve to punish violations of the constraint, and thus allow the limitation to play its rightful role. However in the instance of charity the Lagrangian has nothing to touch. This latent constraint (LC) can however be recognised by the presence of π^{MAX}. The basis of the reasoning behind this π^{MAX} assertion is that if a person chooses their donation for themselves, they should naturally select the donation that corresponds to the global maxima of their RU line. Hence point A marks the preferential (optimal) donation. It can be seen from the graph that in order for a donation to be accepted it must fall to the left of Φ (Φ is an important variable and will be elaborated on in Section 2.5).

The section of the graph represented by $0A\pi^{MAX}$ is likely to be by far the smallest section of the picture, at least in normal circumstances. It is the anomaly by which a person's utility increases with respect to a reduction in their wealth (i.e. with respect to R). The amount is likely to be small enough to be determined exclusively by Z. The brief upward slope (0 to π^{MAX}) represents the sentiment that one would feel uncomfortable making an embarrassingly miniscule donation. For example, notwithstanding that pennies add up to make pounds, to hand a beggar a penny is still likely to be perceived as more of an insult than a donation, and so one typically refrains from doing so.

Z in the equation can be viewed as being a number which represents that size of the $OA\pi^{MAX}$ area. π in the model can occupy any value on the schedule between π^{MAX} and π^{MIN}. $\pi's$ positive first derivative with respect to income, and negative first derivative with respect to R prevent it from occupying a position between π^{MAX} and 0. The line π^{MAX} to 0 is predominately determined by Z, but income does have some say in the positioning of π^{MAX} as it's a jointly determined turning point. The influence of Z

on π can be observed via the control it has over the distance and the gradient of 0 to π^{MAX}, and what it says about the distance from 0 to A. Therefore Z and the income variable together dictate the final positioning of the highest acceptable 'offer' (Φ).

As Z is independent of income, a normal change in income has no effect on the area $0A\pi^{MAX}$. The effect of an income change can appear in two categorical ways, necessarily recognisable by a movement of R^{MAX}; to the right in the instance of an income increase, to the left in the instance of an income decrease. This is of course also associated with a definitional shift of RC and π^{MIN}. The individual may or may not adjust their π^{MAX}; it likely depends on the magnitude of the income change. If it is a non-R^{MAX} adjusting increase (decrease), the slope of the $\pi^{MAX}\Phi$ line becomes more subtle (steep) by way of Φ moving to the right (left). If the change is more dramatic the line $\pi^{MAX}\Phi$ shifts right for an increase, left for a decrease, and R^{MAX} is accordingly repositioned. It must be confessed that having strict points for R^{MAX}, Φ and A is a simplification. They do in reality occupy a sort of indifference plateau that can, *to a degree*, be stretched and shrunk with small changes in the sentiments of the moment. The textbook solution for dealing with this lack of precision is to factor in the welfare assumption of 'completeness', by which the person can perfectly decide and rank their various preferences. It certainly helps to keep the graph neat, but whether the assumption is employed or not makes little difference to the overall message that is being delivered; it's just good manners to admit that it lurks in the background.

Taken as a whole, the graph does thus depict that π is comprised of the relationship between Z and the donation-adjusted income variable $\left(\dfrac{\Omega}{R}\right)$.

Prior to introducing the agents of the model, it is necessary that parameters Z and π be properly brought into focus. Both are essentially circumstance-dependent products of processed information. Being income independent implies that Z is a product of all

relevant information, except for that of income (Ω) and the cost of the potential donation (R). π on the other hand is a product of *all* relative information; it directly picks up the relevant proportional changes in income by means of $\left(\dfrac{\Omega}{R}\right)$, and absorbs all other relevant information indirectly via parameter Z.

Information in this model fits into one of three categories: *(i) endogenous information,* defined as information which is free and unavoidable. *(ii) Weakly endogenous information* is the type of information that is weakly avoidable and can be, but is not necessarily, free. At the very least it entails a negligible 'preference based' opportunity cost. As consumption of this sort of information is essentially choice based, unlike endogenous information, it can be avoided (weak avoidance). *(iii) Purchased (or exogenous) information* is specialised information and as such requires an explicit monetary outlay. This invariably involves an opportunity cost and can perceivably be quite monetarily expensive. This information is specially tailored towards a specific end and as such it is expected to be of a certain quality.

Information from all three categories exerts influence on *Z.* However, as the appropriation of purchased information significantly alters the algebraic set-up, engagement of it is postponed until Section 2.4. The other two types of information are, by virtue of their omnipresence, the most important forms of information in this setting and so some elaboration is required.

Endogenous information is anything the individual considers as being matter-of-fact, takes for granted, holds to be self-evident or acquires simply by way of life passing by. A second glance at the final entry of the list calls for the offering of an example so as to cut through the hazy demarcation line that sometimes separates these two closely related categories of information. Consider for example that the media one chooses to ingest in one's leisure time makes for a classic example of weakly endogenous information. This kind of information may or may not be free of charge. Say for

example if one buys oneself a book, it entails a cost; but, holding social etiquette constant, if it is a gift it entails no monetary cost. The reading of the book does however necessarily involve an opportunity cost of time. Therefore in this example, the distinction between the two types of information gets certified by the presence of an opportunity cost, and by the ability of the reader to avoid reading the book if she so wishes.

The idea is to now take these two categories of information and discuss how they are likely to influence parameter Z. It should become apparent that charitable causes receive an all-important free ride on these sorts of information but, to be clear, the assertion of a ride being free is in no way meant to suggest that the ride is illegitimate or undeserved. To the contrary *if* the information is accurate it is an entirely justified lift.

Considering endogenous information first; this is the very fabric from which the individual weaves her understanding of the world. For example, it is *a matter of fact* that this person to whom I am about to give some money *is my brother*. It is known full well to me that *he has helped me in the past*, and it is within my rational expectations that if I am in trouble *in the future he will be there to help me*. How that particular scenario of facts and expectations is likely to influence the value of my Z should be quite obvious. Indeed, Section 2.2 bore testament to the fact there is no shortage of scholarly explanations to suggest that closeness of kin and reciprocity combine to be the two most significant inflators of a person's Z.

Excluding perhaps what geneticists offer in respect to kin selection, an exact measurement of how a given piece of information influences Z may be very difficult. However, based on intuition, the proposal of a directional relationship would appear to be a straightforward enough estimation. Similarly, it should not be overly difficult to roughly envisage the comparative ordinal magnitudes that various pieces of information affect Z.

Taking things to an even more basic level, in what may be articulated as '*the first pillar of charity*', the piece of endogenous information that underpins all scenarios of charity goes as simply as, 'Ceteris paribus*, giving money to a person makes that person better off*.' There will no doubt be some who care to denounce that assumption as crude. So, to clarify, I am not saying that in all circumstances it does make the person better off, just that it is the endogenous belief of the voluntary donor.

Gift-giving to friends and family is almost exclusively based on endogenous information. While charitable donations and the premiums paid on fair-trade goods do also readily rely on endogenous information, at the same time, weakly endogenous information inevitably seeps into the picture.

Firstly there is the existence of charitable marketing budgets, which seek to inform donors and potential donors of the plights and benefits respectively associated with a particular group of receivers. However large they may or may not be, these promotional budgets are but the tip of the informational iceberg. It is the other more peripheral elements of weakly exogenous information that provide the bedrock for any externally funded messages. Envision for example a person deciding to watch a televised documentary about sub-Saharan poverty or suppose that while watching the evening news a person is made privy to sights of poverty in the developing world. Interpretation of that information and all accompanying complements will work to influence Z. The contribution of any given piece of information does not have to be dramatic, it may just shore up the value at which Z already stands. The interpretative consumption of information such as this constitutes *the second pillar of charity*, '*the conscious recognition or belief that a problem exists in a specific place*.' This does in effect amount to an almost indispensable subsidy to all externally funded messages that the charitable organisation puts out.

This is not to suggest that such forms of information always work to the benefit of charitable organisations. There have for example been a small number of mainstream articles which have sought to tout the negative aspects of fair-trade (see for example Economist 2006). This does however highlight the critical element of trust and the hasty breakdown that can be brought about by the departure thereof. Charities which are shown to be bogus can disintegrate overnight – a circumstance in which people's circumstantial Z parameters promptly resolve to zero. There are however more subtle and interpretive elements of trust erosion that can reduce Z without having it fall to zero, for example, retailers who adhere to the legislative standards of fair-trade, but at the same time recognise the likely affluence of the ethical consumer and so put in place predatory margins above and beyond the norm. Instances of precisely this are detailed in Pierre (2006 p29).

To summarise the message that this thesis is seeking to offer, there are two fundamental central pieces of endogenous and weakly exogenous information which prop up the entire structure of charity. The first pillar is that, holding all else equal, if a person receives money they will be better off (endogenous). The second pillar is the undying belief that a genuine problem exists in the place where the funds will be channelled to (weakly endogenous). The next section builds on this by showing how something as simple as a well designed label can, by virtue of the information it harnesses for free, pose a value far in excess of any promotional budget.

Using both the formula behind π, and information based on discussion of how Z acquires its value, one may care to ponder how comfortably this all sits within an economic interpretation of the world. What it says is this:

Question: How generous are you?

Answer: it depends who's asking, and even then I am only as generous as I feel I can afford to be.

This serves as a stable platform from which to introduce the agents of the model. Not least because Z requires a particular circumstance, the agents are discussed predominantly in the context of fair-trade. However it should be kept in mind that as far as the broader picture is concerned, the general reasoning within can be applied to encompass a much wider array of altruistic endeavours.

2.4 THE AGENTS OF THE MODEL

We are about to deal with interpersonal comparisons of utility, and it seems only just to mention that not all economists agree with this line of reasoning. Albeit solely based on personal intuition, Lionel Robbins (1938) provides distinguished company for those who disagree with what is being done here.

The model accommodates a wide array of agents, some more realistic than others. All agents are confronted with a common problem; they must make a choice between one of the following two utility functions.

(i) $U = \Omega + \Theta$

 or

(ii) $U_{FT} = \Omega + (\pi - R) + \Theta$

Logically, the agent will select whichever function maximises their utility. Taking the context of fair-trade, If U is chosen the agent will purchase the conventional good rather than the fair-trade good. If U_{FT} is selected the person buys the fair-trade good (makes the donation), and as such becomes a so-called ethical consumer. Now, a word of caution in how this thesis will use the term 'rational' with respect to describing the choices undertaken by agents. Notwithstanding that his major contributions to the field

are heavily characterised by dependence on 'pure rationality', lecturing to a public audience, John Nash has expressed the opinion that 'economics is over-reliant on rationality'. Providing back-up for that assertion, Taleb (2004, p.284) extracts a brave confession from John Harsanyi. That being, that if agents are not empirically rational, then by virtue of showing how people 'should act' rather than how they 'do act', economics fails in its quest to be a positive science (rather than normative social philosophy). Not claiming pure science nor wishing to wade too deep in normative enquiry, the reader is advised that the genre of 'rationality' that is being spoken of here should not be regarded as the usual suspect of mainstream economic literature. Rather, what is to be described as 'rational' in the context of this discussion is the more humble 'behavioural economics' approach to rationality. Simply, any time any of us make a choice we subconsciously hold two comparable entities in our mind – numbers are of course the only entities that we can universally rank. Therefore, each of us acts in accordance to how we have subjectively ranked the options before us. Hence, what is being said here is not that being an ethical consumer is either rational or irrational, just that it is personally rational to be an ethical consumer if the cost of being one is less than the utility based benefit of not being one. This form of rationality is based predominantly on 'real-time experienced utility' which is essentially 'decision utility' (see Kahneman and Tversky 2000 Ch.37)

Next, the agents themselves. The most obvious person to first consider is an Ebenezer Scrooge type of character, the like of which will always reject the charitable request on the grounds that they cannot derive a single drop of utility from giving anything to anybody. The model captures this person as so:

$Z = 0, \Rightarrow \pi = 0 \therefore$ *Where R >0, U > U$_{FT}$*

Hence this person always chooses U over U$_{FT}$

Thought of in terms of the benevolence curve, this equates to complete collapse of the $0A\pi^{MAX}$ area, such that both π^{MAX} and point A, converge on 0. Therefore $Z = 0$ is the defining characteristic of this person, all positive values for π automatically disintegrate and so this person would only be indifferent to buying a fair-trade good in the presence of no mark up ($R = 0$). Therefore, holding information constant, this person would never acquiesce to this charitable request. But equally it should be clear that by having had to state that information be held constant, Z is as much circumstance-dependent as it is personality-dependent; hence the 'Scrooge' tag is appropriate in more ways than one. From one perspective, the famous Dickens tale is not just the story of a mean-spirited man, but equally a chronicle of how fluctuations in endogenous information were sufficient to leave behind a much reformed character. Whilst each of us can surely smile at the thought of being able to identify one or two, for what it's worth, it's unlikely that many people truly have an aggregated Z parameter of zero. It's much more probable that their Z is minuscule and/or the refusal to donate is due more to the issue of their income dependent charitable disposition (π). The empirical game in Section 2.5 adds credence to that suggestion.

The next agent grouping moves closer to better encompassing reality, and by illustrating it with a set of numeric examples it will be shown that becoming an ethical consumer (donor) is not necessarily an authentic signal of a person having a truly kind disposition.

As was the case above, the agent is being asked to choose between U and U_{FT}; again invariably the person chooses whichever expression maximises their utility, and as such their purchasing behaviour relates to their chosen function. The simple condition which characteristically defines this person is simply $Z > 0$, and as regards their propensity to donate, they only consume endogenous and weakly endogenous information. The

information that they have so far acquired over their lifetime is sufficient to ensure that they harbour a $Z > 0$ for the charity in question. Hence in relation to fair-trade, the movement gets a free ride on the widely held belief that agricultural producers in the developing world are a notably downtrodden contingent of the global community – equivalent to the second pillar of charity that was outlined above. The existence of the parallel free ride is what was previously designated as being the first pillar of charity; holding all other things equal, giving money to a person makes that person better off.

In order to validate that second pillar assumption within the context of fair-trade, one need only subscribe to the following plausible belief; if one were to confront any literate adult, and ask that person what they can deduce from the label, the response, *in some shape or form*, shall be to infer that somebody along the supply chain was deemed to have been receiving an 'unjustly small' fraction of the cost. As such, a proportion of the fair-trade cost of the good attempts to correct for the alleged imbalance by giving additional monies to that relatively deprived somebody. While people's perceptions of proportional costs' specifics are likely to differ, it would probably not be too much to expect that when pressed on who the likely recipient is, most would suspect it to be the farmer or the labourer.

It can therefore be claimed that the strength of the fair-trade label is to be found in the ease by which it exploits information which the viewer likely already harbours. This is compounded by appreciation of the fact that, while the information from the label is itself formally categorised as being 'weakly endogenous; the opportunity cost of a glace is so minuscule that it comes as close as possible to being fully endogenous. Accordingly, Z and π are the recipients of a substantial boost – an indispensable free ride.

Refocusing attention back on to the original utility equations, it is clear that $\pi > R$ resolves to be the necessary and sufficient condition for a person to be an ethical

consumer. If $\pi = R$, (Φ in Figure 2.1) the consumer is indifferent between choosing U and U$_{FT}$, although in a case such as this we could possibility assume the attachment of a tiny utility epsilon on U$_{FT}$ to make the person choose it when it involves an extra monetary outlay of exactly zero. Where $\pi < R$ the person will chose U over U$_{FT}$. In summary, it may be stated that an individual will only be an ethical consumer if they satisfy the condition $\pi > R$, for which $Z > 0$ is a necessary but not sufficient condition. Table 2.1 offers some numeric examples by which to illustrate the interaction of these variables.

Table 2.1 The 'kindest' people aren't always the ones that give

	Z	Ω	R	π	U_{FT}	U	$U_{FT}-U$
Person A	0.2	2100	20	21	2101	2100	1
Person B	0.3	2400	20	36	2416	2400	16
Person C	0.9	250	20	11.25	241.25	250	-8.75
Person D	0.3	2400	27	26.66	2399.667	2400	-0.33333
Person E	0.3	2410	27	26.77	2409.778	2410	-0.22222

Figure 2.3 assumes no transitory income $(\Omega_t = 0, \Rightarrow \Omega_p =^{fr} \Omega_p = \Omega)$

Person A is the 'income independent' meanest of all (lowest Z) but still buys fair-trade products. Person C is the 'income independent' kindest of all, but does not become an ethical consumer. Person E is the 'income dependent' kindest of all (highest π) but does not buy fair-trade. Person B and person D are just as 'income independent' kind as each other and have identical incomes, but unlike person B, person D does not buy fair-trade because she buys her groceries in a place which employs a predatory mark-up. Person A is poorer and 'income independent' meaner than person D, but still person A becomes an ethical consumer while Person D does not.

It is perhaps worth pointing out that the *R* and *Z* numbers in this example are much exaggerated upwards. *R* in most practical cases is unlikely to account for anything near the proportion of income that it does here, and similarly *Z* makes a boast of circumstantial kindness that the empirical game in Section 2.5 will place in a more real perspective. The inclusion of arbitrary values (big numbers) is simply to illustrate the point, the overall message remains unaffected.

The next section investigates how things change with the introduction of purchased (specialised) information.

2.4 INFORMED CHOICE V UNINFORMED CHOICE

Thought of exactly in the context of that what has just been discussed, the new information works to rationalise or refine the value of a circumstantial *Z*. For the sake of coherence, things are picked up as close as possible to where the previous section left off. Initially therefore it is convenient to think of this as being the situation of an individual who is choosing which utility function to occupy. However, in the face of what's going to turn out to be an expensively obtained positive externality, the situation will eventually give way to a more institutional-based arrangement.

The person now opts for a new utility function, similar to before but with the altered parameters π^*, R^* and the added parameter s.

$$U_S = \Omega + (\pi^* - R^*) - s + \Theta$$

This is the initial utility function of a consumer who cares very much about a particular 'good' cause, but is uncomfortable with making a blind donation. They wish to have evidence of a positive effect in order to justify their potential support (*R*) for the

charitable endeavour. They are willing to spend amount s so as to acquire the information they require; this is a search cost that is presented in. This serves to refine their expenditure decision, such that spending s has the effect of changing π into π^* and R into R^*. The information that s purchases gets captured by δ. What follows relies on the assumption that δ will be of a certain quality and that the buyer will recognise its quality. If the search produces negative results, then $\delta = 0$ (fair-trade does not work). If the search produces positive results, then $\delta = 1$ (fair-trade works)[12]. This leads to δ entering the equation as so:

$$R^* = R\delta \ \text{ and } \ \pi^* = \Psi\alpha \ \text{ where } \ \Psi = \delta + Z$$

$$\text{Letting } \alpha = \left(\frac{\Omega}{R}\right)\delta$$

$$\Rightarrow U_S = \Omega + \Psi\left(\frac{\Omega}{R}\right)\delta - R\delta - s + \Theta$$

$$\Rightarrow U_S = \Omega + \Psi\alpha - R\delta - s + \Theta$$

$$\Rightarrow U_S = \Omega + (\pi^* - R^*) - s + \Theta$$

The new variable Ψ that replaces Z should not be considered as a new Z per se. Altering Z in this manner poses no 'problems of accounting' because it was never claimed that the model's accounting was anything other than ordinal. It did however in its previous form have a much stronger claim to cardinality than it does in the presence of a search cost. The introduction of the search cost requires the understanding that a kind of sequential game being played. There will be transitory (round 1) utilities to consider, $^1U_*$ and $^1U_{FT*}$ as well as permanent (round 2 plus) utilities, $^{2+n}U_*$ and

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[12] This binary value of δ is in fact a simplifying assumption that allows for a more coherent explanation. Increased sophistication could be added by recognising δ to be a proportional probability.

$^{2+n}U_{FT*}$. This in turn calls for the assumption that the agent knows that s is a one-off payment (a sunk cost essentially) the significance of which will expire after it is paid, and as such bases their decisions on second round (permanent rather than transitory) utility values.

Evident from the equations, if δ acquires a value of zero, both π^* and R^* will disintegrate leaving the consumer selecting utility $^1U_* = \Omega - s + \varepsilon + \Theta$, where ε is a small immeasurable piece of utility that the person derives from 'knowing' that to buy fair-trade is a waste of time and money. If on the other hand the information found is positive ($\delta = 1$), R remains unchanged ($R^* = R\delta \Rightarrow R^* = R$), while π^* receives a boost from for having 1 added to the traditional value of Z ($\Psi = \delta + Z$). The condition $\delta = 1$ does not make it strictly definite that the consumer will then choose to buy the fair-trade good; the combination of low Ω and higher R could still scupper the deal. If this were the case the consumer would be left with the following utility function $^1U_{-\varepsilon} = \Omega - s - \varepsilon + \Theta$, identical to that of $^1U_*$ but with a negative epsilon. The negative epsilon reflects the 'touch of guilt' that the person would experience from not purchasing fair-trade, whilst knowing it would make a significant difference to the target group. It is however possible to preclude the existence of $^1U_{-\varepsilon}$ by the inclusion of a simple but realistic assumption; in advance of deciding to search (the paying of s) the person knows the values of Ω and R, considers the ratio to be acceptable, and that ratio remains roughly constant over the duration it takes to acquire the value of δ. Therefore, on those plausible grounds it is taken that $\delta = 1$ causes the consumer to choose the benevolent utility function ($^1U_{FT*} \to {}^n\overline{U_{FT*}}$). The stages of choice are summarised by figure 2.3 below.

Figure 2.3 flow diagram of informed vs. uninformed choice

$$U_* = \Omega + (\pi^* - R^*) - s + \Theta$$

$(\delta = 0)$ $(\delta = 1)$

Round 1 ${}^1U_* = \Omega - s + \varepsilon + \Theta$ ${}^1U_{FT*} = \Omega + (\pi^* - R) - s + \Theta$

$(If\ s > \varepsilon \Rightarrow {}^1U_* < U)$

Round 2 ${}^2\overline{U}_* = \Omega + \varepsilon + \Theta$ ${}^2\overline{U}_{FT*} = \Omega + (\pi^* - R) + \Theta$

$({}^2\overline{U}_* > U)$ $({}^2\overline{U}_{FT*} > U_{FT})$

Foreseeable utility: $\displaystyle\sum_{n=2}^{N} {}^n\overline{U}_*$ $\displaystyle\sum_{n=2}^{N} {}^n\overline{U}_{FT*}$
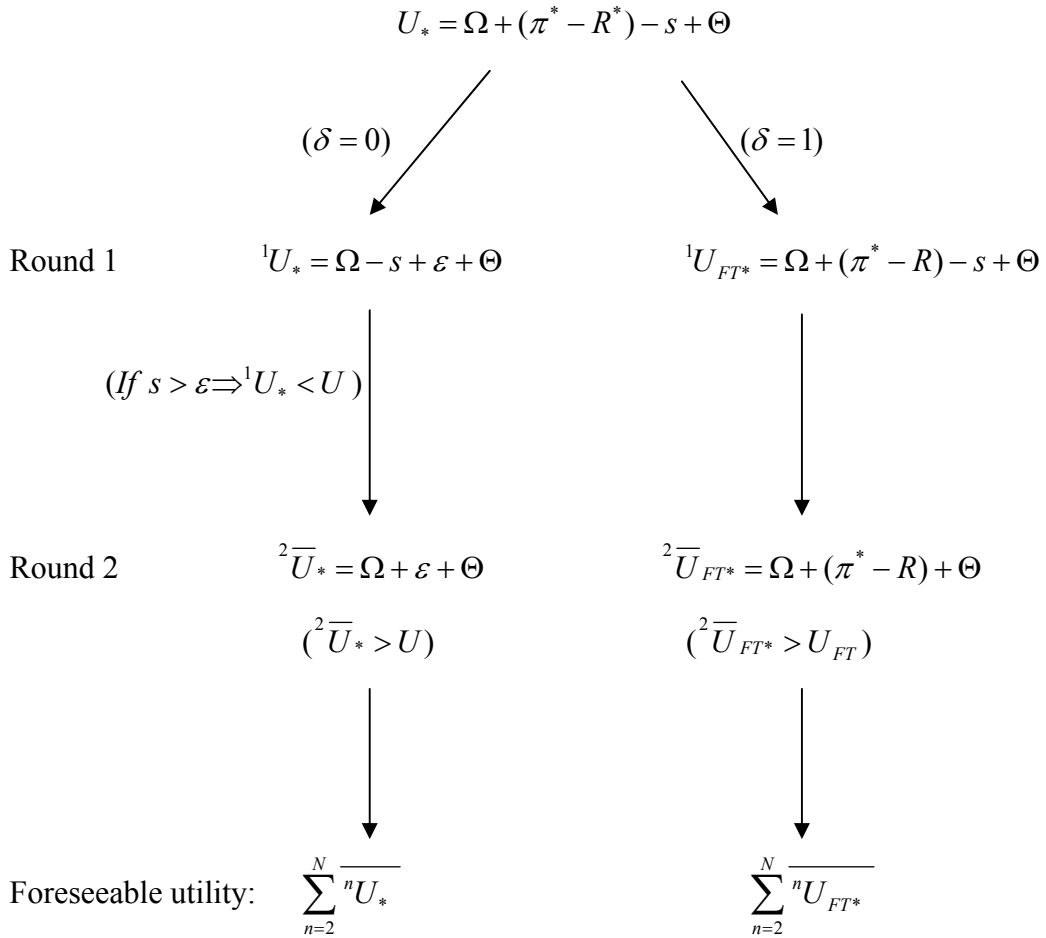
From round two onwards, incremental utility stabilises such that ${}^2\overline{U}_* = {}^3\overline{U}_* = \ldots = {}^n\overline{U}_*$

for all n >1, and the same for fair-trade utility $({}^n\overline{U}_{FT*})$. This is because the person is

deemed to be content with the results of the search and so for the foreseeable future

does go to the pains of undertaking another search. It is evident from the second round

onwards that, on a one to one match basis, informed utilities outperform their

uninformed counterparts $({}^2\overline{U}_* > U)$ and $({}^2\overline{U}_{FT*} > U_{FT})$. Table 2.2 offers some numeric

examples by which to illustrate the claims that are being made.

Table 2.2 Examples of Informed and Uninformed Donation Utilities

	Person A	Person A'	Person A"	Person B	Person B'	Person B"

s	-	50	50	-	50	50
Z	0.2	0.2	0.2	0.15	0.15	0.15
R	20	20	20	20	20	20
Ω	2100	2100	2100	2500	2500	2500
π	21	-	-	18.75	-	-
δ	-	0	1	-	0	1
Ψ	-	0.2	1.2	-	0.15	1.15
α	-	0	105	-	0	125
π^*	-	0	126	-	0	143.75
R*	-	0	20	-	0	20
U	2100	-	-	2500	-	-
U_{FT}	2101	-	-	2498.75	-	-
Gains from FT	1	-	-	-1.25	-	-
$^1U_*$	-	$2050 + \varepsilon$	2050	-	$2450 + \varepsilon$	2450
$^1U_{FT*}$	-	2030	2156	-	2430	2573.75
Post search gains from FT (R1)	-	-20	106	-	-20	123.75
$^2\overline{U}_*$	-	$2100 + \varepsilon$	2100	-	$2500 + \varepsilon$	2500
$^2\overline{U}_{FT*}$	-	2080	2206	-	2480	2623.75
Post search gains from FT (R2)	-	-20	106	-	-20	123.75

The artificially generated example takes two people A and B and illustrates three parallel scenarios for each. In the first two, A and B, are given the same values as they were in Table 2.1 (i.e neither agent searches). Indicated by the "Gains from FT" row, Person A buys the fair-trade good, whereas person B does not. In the remaining scenarios, each individual purchases information about the outcome of fair-trade, and for this they pay 50 ($s = 50$). A' and B' indicate instances where the acquired information suggests that fair-trade is of no benefit $(\delta = 0)$ to those it is supposed to assist. This then causes the individuals to feel no extra utility regarding fair-trade $(\pi^* \rightarrow 0)$ and so for any instance in which a fair-trade mark-up exists ($R > 0$) the required condition of $\pi > R$ fails and makes the person choose $^1U_*$ over $^1U_{FT*}$. In the

first round, this utility level will likely be below that of its 'uninformed' equivalent (*If* $s > \varepsilon \Rightarrow {}^{1}U_{*} < U$). The search cost *(s)* is a one-off, so after the first round its value is restored, therefore in a one for one match the following condition applies $({}^{2}\overline{U}_{*} > U)$, and utility is taken to then stabilise from round two onwards, ${}^{n}\overline{U}_{*} > U$ *for all n ≥ 2*. By the presence of ε, the summation eventually more than pays back the cost of *s*. Hence it may be claimed that, *the informed choice is superior to uninformed choice, even when the outcome of the search is not necessarily what the individual wishes to hear.* Admittedly, the gains are weakest for those who originally bought fair-trade and subsequently discovered that it was an ineffective contribution. In addition a high *s* might pose a difficulty in regards the overall payback time, and this problem is addressed in due course.

Scenarios A" and B" relate to instances in which the returned information reflects positively on fair-trade $(\delta = 1)$. The utilities of both A and B are enhanced, and in the case of B it has the effect of turning her into an ethical consumer. The overall message is again that within this context of charity, informed choice is superior to uninformed choice.

The practical point that must be called to order is this; would anybody really be willing to spend their own money on this sort of investigation? Coupling this question with the likelihood of *s* being very large leads to an answer that is likely to be an unequivocal 'no'. What should be apparent is that δ needs to be thought of as a kind of public good with a positive externality attached to it. δ is a piece of knowledge, and as such it would be overly indulgent to begin talking about increasing returns as it is only 'knowledge as a category' which exhibits that fateful characteristic. Nonetheless, once its initial acquisition is paid for, proliferation is relatively cheap. Hence the outcome of this model suggests that if a charitable cause is significantly large and boasts a wide patronage, it is legitimate that public money be spent on investigating whether or not it

really is a 'worthy' cause. Doing so not only helps to direct scarce funds, but also increases the utility of the donors irrespective of how the attained information reflects on the performance of the charity itself.

2.6 EMPIRICAL DESIGN

The aim of this section is to outline a technique by which to effectively decouple 'income independent benevolence' from 'income dependent benevolence' and de facto generate scientifically comparable units of the latter. As income dependence was sufficiently dealt with in the previous sections, whenever terms such as kindness, altruism and benevolence are now used, unless otherwise stated, they are being referred to in the capacity of income independence.

There are obvious difficulties in attempting to empirically verify the theory, none more apparent than the entwined attainment of π and Z. However, this can be overcome with a surprisingly simple trick. The experiment proceeds by recognising the following set of relationships:

$$\pi = Z\left(\frac{{}^{fr}\Omega_P}{R}\right)$$

Letting $\Delta_U = \pi - R$ *and describing* Δ_U *as the change in utility*

$$\therefore \Delta_U = 0 \Rightarrow \pi = R$$

$$\Delta_U = Z\left(\frac{{}^{fr}\Omega_P}{R}\right) - R$$

So, the ruse is to isolate Z by clinically obtaining the value of R at which $\Delta_U = 0$. What

follows is a method that takes the circumstance of fair-trade and solves for the associated *Z*, or to be precise, $^{FT}z_i$, because strictly speaking we must now move from the general to the specific.

Once again, the person will face a choice of buying either a fair-trade or conventional good. It is preferable that the good is something that individual would ordinarily buy, as ideally none of this should be based on artificially stimulated demand. In an ideal setting, this experiment would be sprung upon an unsuspecting consumer while they are making a usual purchase. Obviously this would be difficult to enact and, as is the way with many psychology experiments, the best that can probably be hoped for is a well orchestrated clinical setup. Nonetheless, for the sake of descriptive colour and a glimpse of the trade-offs, the narrative that follows adheres mostly to the real world.

Now, returning us to where this chapter began, suppose person A wanders into a coffee house and orders a cup of coffee. The consumer is confronted with a fair-trade and conventional option and informed that the price differential is R. The person will accept or reject the fair-trade option. If they accept the experiment is repeated, but with the price of the fair-trade cup being increased. If they reject the offer the experiment is also repeated, but the price of the fair-trade good is then decreased. In each instance their answer lets us know which way around the inequality sign is between π and *R*. An acceptance indicates $\pi > R$ whereas a rejection specifies $\pi < R$. Structured repetition continues in this manner until the turning point is isolated. Let's say that the person agrees to pay £0.20 above the conventional price, but when the cost increases to £0.21, they reject the fair-trade option in favour of the conventional coffee. We may claim to have found their highest acceptable price (R^{YES}) and lowest rejection price (R^{NO}). This allows for the deduction that Δ_U is weakly positive at R^{YES} and weakly negative at R^{NO}. Therefore taking the average of these two values and plugging them into the last of the

above equations in place of R accommodates the claim to have identified the point at which $\Delta_U = 0$. In terms of deriving Z, this amounts to the following formal statement:

$$0 = {}^{t}_{k}\hat{z}_i \left(\frac{{}^{fr}\Omega_P}{{}^{t}_{k}\left(\dfrac{R^{No}+R^{Yes}}{2}\right)_i} \right) - {}^{t}_{k}\left(\frac{R^{No}+R^{Yes}}{2}\right)_i \Rightarrow {}^{t}_{k}\hat{z}_i = \left(\frac{{}^{t}_{k}\Phi_i}{\left(\dfrac{{}^{fr}\Omega_P}{{}^{t}_{k}\hat{\Phi}_i}\right)} \right)$$

Where ${}^{t}_{k}\hat{\Phi}_i = {}^{t}_{k}\left(\dfrac{R^{No}+R^{Yes}}{2}\right)_i$

${}^{t}_{k}\hat{\Phi}_i$ *is recognisable from Figure 2.2, in which it is depicted without subscripts or superscripts. The variable as it is here may be referred to as individual i's reservation donation in circumstance k of context t. I am purposely being strict with the k and t superscripts so as to try to mitigate behavioural problems that are associated with a violation of 'the invariance principle' (preference reversal), and relatedly to account for the six conditions[13] for interpersonal and intrapersonal comparisons laid down by Kahneman and Tversky (2000). This notation applies similarly to variable z. For simplicity of explanation, the previous sections did not differentiate between the general and the specific. This is a luxury that must now be discarded, hence the presence of the subscripts and superscripts now attached to the variables. The circumflex (^) and the lower case z inform us that, strictly speaking, we are now working with estimates.*

As it should be straightforward enough to obtain a person's ${}^{fr}\Omega_P$, Z can now easily be solved for. For the sake of clarity and due to the discovery of a pitfall (see below), consider the coffee example from above. Assuming Person A has a take-home

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[13] Inclusiveness, ordinal measure across situations, a distinctive neutral point, interpersonal comparability, time neutrality, and independence of experiences.

permanent income of £35,000 per annum and frequents a coffee house once a week, on each occasion buying a cup of fair-trade coffee at the reservation mark up of £0.20.

$$\overset{FT}{_{CH}}\hat{z}_A = \left(\frac{0.205}{3283.3}\right) = 0.0000624$$

The topmost superscript FT/CH indicates the circumstance of 'fair-trade' in the context of a 'coffee house'.

The pitfall which informs us of the requirement for multidimensional subscripts surfaces as follows; let us suppose that Person B has an identical income to that of Person A. Now, Person B also likes coffee, but does not go to a coffee house, instead once a month they buy a 250g bag of percolator coffee to drink at home. The same identification of $\hat{\Phi}_i$ game is played with this person and it is discovered that they will buy the fair-trade packet of coffee at a mark-up of £0.35, but reject it at £0.36. Therefore:

$$\overset{FT}{_{GS}}\hat{z}_B = \left(\frac{0.355}{8215.96}\right) = 0.0000432$$

As 'differential kindness' is defined as being the proportional difference between individuals' z scores, looking at the above two results might lead one to infer that Person A is 44% kinder than Person B. However, this is where the lower part of the northwest superscript (GS) informs that an inappropriate comparison has been made. There is nothing wrong with the individual estimates per se, but what the mismatch serves to show is that, even though a common cyclical period of consumption has been controlled for, this still does not take away a problem that is akin to a form of unobserved heterogeneity. One must consider the influence of asymmetric opportunities and how the individual incrementally encodes the donation. Say for example, if Person B were to lose her packet of coffee, would she return to the store and buy fair-trade again, or would she consider her monthly donation to have already been made and as such buy the conventional coffee? For the 44% figure to hold, the answer to that question would have to be that B chooses the conventional coffee. Person A in a grocery store would also have to refuse any fair-trade mark-up. Maintenance of the 44%

differential requires that numerous other unobserved scenarios such these as hold, few of which can be tacitly relied upon. This is all entwined with the other vagaries of the environment, for example perhaps the relaxing ambiance of the coffee house helps make a person more generous. The less a comparative analysis takes for granted, the healthier that analysis is.

Driven home is the requirement that the experiment be as strict as possible in comparing 'like for like' not just over a commonly scaled period of consumption, but also in appreciation of the various environmental sub-groups and the level of perfection within their identification. This may be thought of as being quite similar to the econometric refinement technique of 'propensity score matching'. This helps to visualise the process in the form of a tree; as was outlined in Section 2.2, the tree as a whole is called altruism, and like everything else in the world it's the sum of its parts. To be specific, altruism is the sum of two parts; pure altruism and normal altruism. Likewise each of these is in turn is the sum of its parts. By examining fair-trade, we are, by the definitional condition of Section 2.2 ($E(^{BA}F_{t=1+n}) = 0$), on the pure altruism branch. That is to say, the donor does not expect the receiver to do anything for him in the future; the expectation of a repatriated fitness is 0. Setting up a sub-branch comparison between two people, i and j, can be visualised as follows:

Figure 2.4 Theoretical sub-branch comparison tree
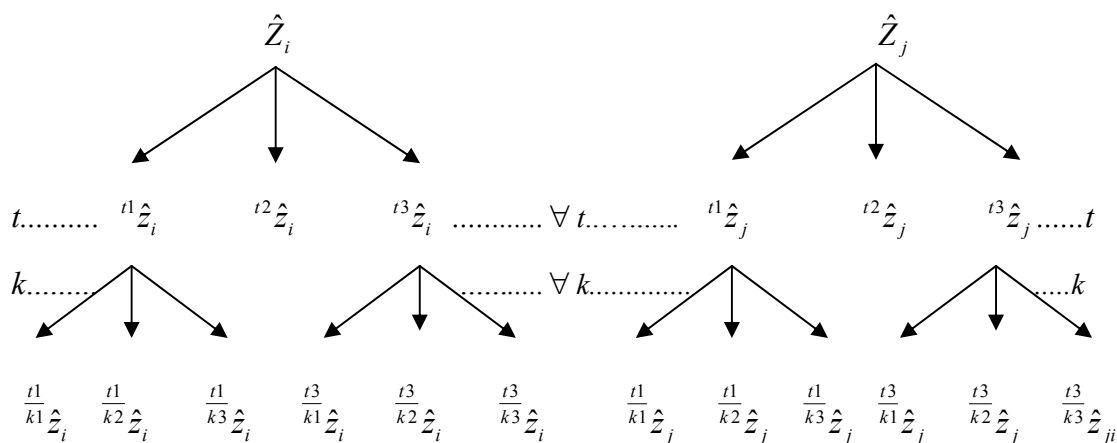
Where $\hat{Z}_i = \sum_{t=1}^{T} {}^t z_i$ for all t, within which $\hat{z}_i = \sum_{i=1}^{\frac{Ti}{Ki}} {}^t_k \hat{z}_i$ for all k...................

In this thesis fair-trade is the context, so in terms of the picture above, ${}^{t1}\hat{z}_i = {}^{FT}\hat{z}_i$, beneath which fair-trade is a is a subcomponent of overall benevolence $({}^{FT}z_i \subseteq Z_i)$. In the example that has so far been considered, we have identified two consumption (donation) based subgroups for one common fair-trade product, coffee. Equally we may well have had different sub-branches for different fair-trade products, e.g. bananas and cocoa. In the wider design there is much complexity with which to contended, and endless scope exists by which to seek perfection. For the purposes of practical description however, consider for now just the branches of the tree that Persons A and B have been deemed to occupy.

Figure 2.5 mismatched generosity scores

$${}^{FT}\hat{z}_A \qquad\qquad\qquad {}^{FT}\hat{z}_B$$

$${}^{FT}_{CH}\hat{z}_A = 0.0000624 \qquad {}^{FT}_{GS}\hat{z}_A = ? \qquad {}^{FT}_{CH}\hat{z}_B = ? \qquad {}^{FT}_{GS}\hat{z}_B = 0.0000432$$
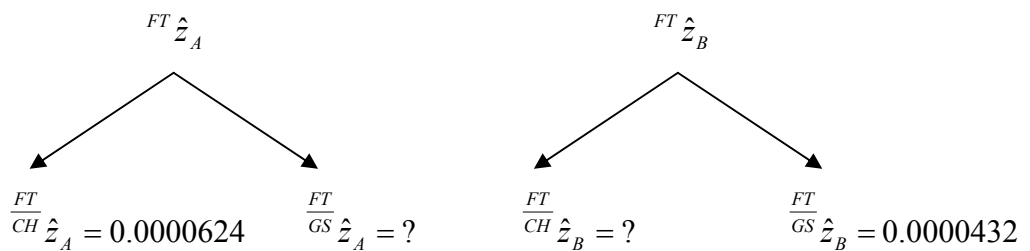
Ideally it would be a matter of arbitrarily summing up all the elements of each subgroup in order to make a statement about a particular context (master group), but the lesson of Figure 2.3 is that one must be mindful to avoid mismatched comparisons – context is sometimes not enough. If a full-context z can be obtained, all the more robust is the picture. However as it is solely for the purposes of comparison that z is being sought, we are not placing emphasis on an individual's z value per se, but rather on proportional differences between the z values of different individuals. Thinking of it in the way a statistician works with a sample, full tree identification is not strictly

necessary. What is necessary is that circumstances of judgement be undertaken with appropriately matched branches.

Defining the different subgroup properties can be helpful in organising one's thoughts as regards the effectiveness of the matching process. 'Perfect Subgroup Identification' (PSI) is defined to be one in which all the outlets of the subgroup have been identified. So, in the example above, if it is correct to say that there are only two instances in which a person purchases fair-trade coffee, in a grocery store or in a cafe, then a perfect subgroup has been identified. 'Weak Occupation' is when an agent has failed to generate values for all identified subgroups, with or without the condition of PSI. Agents A and B fall into this category. 'Near Perfect Occupation' (NPO) is when an agent has generated a value for each and every entry within all identified subgroups, but in the absence of PSI. 'Perfect Occupation' combines those two; it's near perfect occupation under the condition of PSI.

The complementary sets of definitions are 'match based' and necessarily involve two or more agents. 'Zero Occupational Match,' (ZOM) is between two or more agents and implies that, of the subgroups they each occupy, none are in common with each other. Therefore ZOM describes the situation between A and B. A 'Near Perfect Occupational Match' (NPOM) is when two or more agents exhibit the characteristics of near perfect occupation. Accordingly, a 'perfect occupational match' (POM) is a NPOM under the condition of PSI. As a final refinement there is the recognition of subgroup consumption (donation) being either symmetrical or asymmetrical. For example, if two people went to the coffee house to buy coffee, they are matched, but if one buys two cups and the other buys one cup, then the match is asymmetrical.

A few examples can perhaps assist in making this framework and these cumbersome acronyms more digestible. Three people are added to the two that already exist, Persons C, D and E. Person C and Person D each go to a coffee house for a weekly cup and also

purchase a 250g bag of percolator coffee from a grocery store. The reservation donation game is played with each of them, and their respective reservation donations are discovered. In the coffee house, Person C rejects a mark-up of £0.16, but agrees to pay £0.15. In the grocery store, the same person rejects a mark-up of £0.26, but agrees to one of £0.25. The respective figures for Person D appear as so; in the grocery store they reject £0.31 but accept £0.30, but in the coffee house, they accept a mark-up of £0.25, while rejecting one of £0.26. Person E has the exact same grocery store price characteristics as Person D, but instead of drinking one cup of coffee in the coffee house, their preference is to consume two cups. Holding all incomes constant at £35,000 per annum, the generosity scores appear as follows:

Figure 2.6 Simulated generosity scores in context

Coffee house	Grocery store
$\frac{FT}{CH}\hat{z}_C = \left(\dfrac{0.155}{4342.4}\right) = 0.0000357$	$\frac{FT}{GS}\hat{z}_C = \left(\dfrac{0.255}{11437.9}\right) = 0.0000233$
$\frac{FT}{CH}\hat{z}_D = \left(\dfrac{0.255}{2639.5}\right) = 0.0000966$	$\frac{FT}{GS}\hat{z}_D = \left(\dfrac{0.305}{9562.84}\right) = 0.0000319$
$\frac{FT}{CH}\hat{z}_E = \left(\dfrac{0.255}{2639.5}\right)(2) = 0.0001932$	$\frac{FT}{GS}\hat{z}_E = \left(\dfrac{0.305}{9562.84}\right) = 0.0000319$

As they are only for the purposes of explanation, these examples are not particularly complex. However, it's not difficult to envisage how knotty things could get in a wider empirical analysis, on which note, matching trees make for an organised vantage point from which to decipher the legitimacy of various comparisons. The remaining trees

from within this example are as follows:

$$^{FT}Z_C = 0.0000587$$

$$^{FT}_{CH}\hat{z}_C = 0.0000357 \qquad ^{FT}_{GS}\hat{z}_C = 0.0000233$$

$$^{FT}Z_D = 0.0001285$$

$$^{FT}_{CH}\hat{z}_D = 0.0000966 \qquad ^{FT}_{GS}\hat{z}_D = 0.0000319$$

$$^{FT}Z_E = 0.0002251$$

$$^{FT}_{CH}\hat{z}_E = 0.0001932 \qquad ^{FT}_{GS}\hat{z}_E = 0.0000319$$

$$^{FT}_{1CH}\hat{z}_D = 0.0000966 \qquad ^{FT}_{2CH}\hat{z}_D = 0.0000966$$
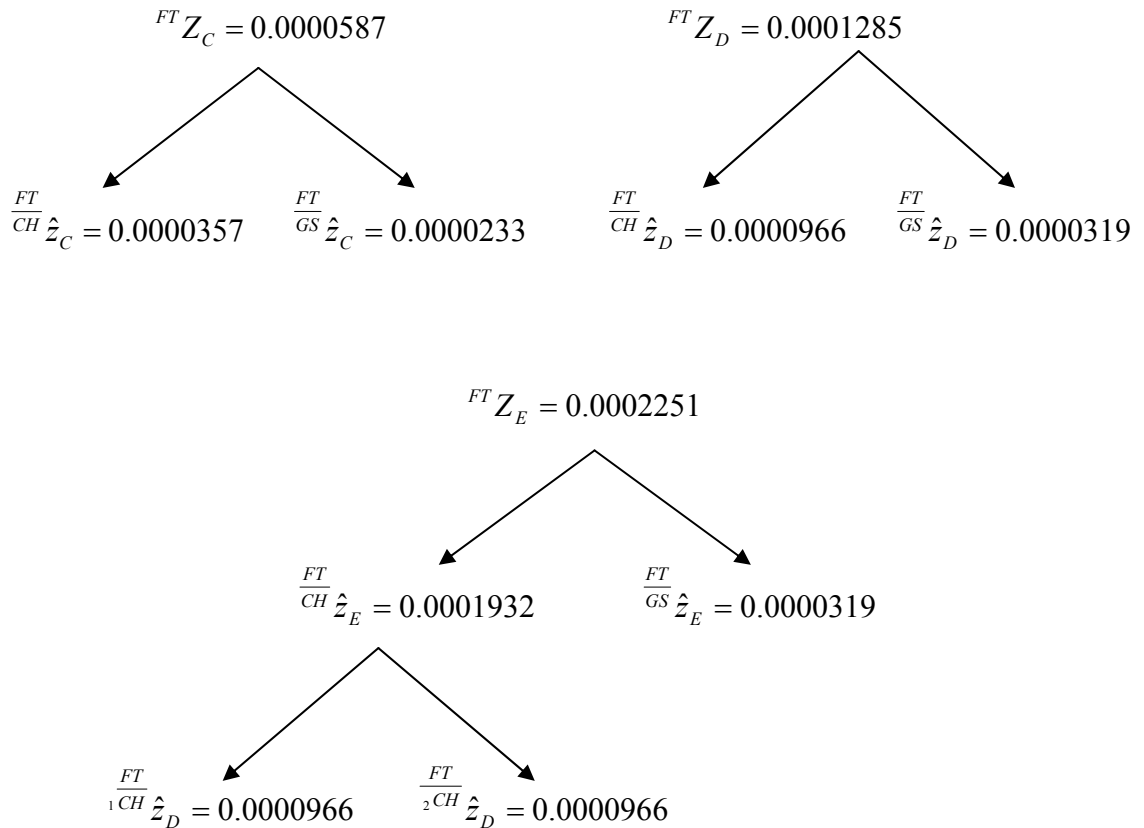
For the sake of coherence, it is being assumed that PSI exists in the two consumption options (CH and GS). That is to say, other than a coffee house or a grocery story there are no other circumstances in which a person will have the opportunity to purchase fair-trade coffee. The initial two people, Persons A and B, fall into the category of ZOM, and so a direct comparison between the two would be somewhat crude. Persons C, D and E boast perfect occupation – they have generated values for all identified subgroups under the condition of PSI. POM can be declared to exist between agents C, D and E, however it's only between C and D that POM is symmetrical. Pair-wise comparisons between C and E are asymmetrical, likewise for D and E. The reason for the asymmetry is simply that Person E drinks two cups of coffee, while the others each drink one. By exhibiting the same reservation donation each time E acts in a consistent manner. If consistency is generalised (as is a standard assumption of welfare

economics) it allows for the forcing of symmetry via two possible ways. The observation of E buying the second cup could be dropped, or else it could be hypothetically claimed that if either C or D were to buy an extra cup of coffee their reservation donations would not have to be renegotiated. It's straightforward enough to appreciate that each of these approaches amounts to an identical outcome in terms of comparing the values between agents.

Regarding the trees that have been generated, looking at things crudely (i.e. by taking the summation as the basis of judgement) it appears that E is the kindest; 283% kinder than C, 75% kinder than D, 261% kinder than A, and 421% kinder than Person B. The purest pair-wise comparison is that between Persons C and D, because PSI is present and the match is POM symmetrical; it can thus be stated with confidence that Person D is around 50% more generous towards fair-trade coffee than Person C.

The inclusion of A and B without matching would place B as the meanest and C as the second meanest, but by pair-wise matching and controlling for symmetry, the discrepancy of generosity between A and E falls from 261% to 55%. Meanwhile, the margin of difference between B and E shrinks from 421% in favour of E, to be 35% in favour of B. If the assumption of transitivity (as is a standard assumption of welfare economics) is permitted to intrude, it becomes possible to bring A and B into the ranking fold. Via pair-wise matches, A > C (624>357), but less kind than everybody else. By similar comparison, B becomes kinder than C, D and E. Therefore as both D > A and E > A, from transitivity it can be said that B is kinder than A. Matching without adjusting for symmetry places E > D, but controlling for symmetry renders that E is just as kind as D (E=D). Table 2.3 displays a summary of how much of a difference matching and adjusting for symmetry actually makes in terms of ranking.

Table 2.3 Non-Matched and Matched ranked Comparisons

Crudely Ranked	Matched and adjusted for symmetry and transitivity
E (2251)	B
D (1285)	E=D
A (624)	D=E
C (587)	A
B (432)	C

Appreciation of the various 'real world generosity trees' that different individuals harbour suggests that, even after controlling for income, arbitrary summations of altruistic scores are unlikely to facilitate a fair and just comparison between individuals. Thought must be given to the appropriate matching of subgroups. If the subgroups are perfectly matched, a stronger statement can be made regarding the magnitude of the comparison. In the absence of subgroup matches, bridges of comparison can be built by the inclusion of the transitivity assumption. However, reliance on transitivity dilutes what can be said about magnitude and renders that the analysis defaults to rank order comparisons. This in turn brings to light some of the important trade-offs that exist between the clinic and the real world. In the former, mismatched context and subgroups are unlikely to be a problem as the experiment can be designed to generate perfectly symmetrical observations. However it is likely that the clinic will fail to capture the fluctuations of circumstantial temperament, and one must also be sensitive to potential discrepancies between stated and revealed preference. Furthermore, in terms of data, the real world offers a genuine unbalanced panel while a clinic can at best tender a kind of fictitiously balanced panel. That is to say, Person A claiming that he would be happy to go into a coffee shop once a week and pay mark-up R amounts to one clinical observation, but the same person actually undertaking such an act amounts to n*t observations, i.e. 52 true observations.

Amidst the focus of the artificially generated examples, it must be emphasised that all statements of kindness strictly relate to the specific context of *fair-trade coffee*. How much one may wish to generalise things upwards/more widely is, in the absence of estimation, one's own intuitive call. For example, from the scenario here, one would surely have few qualms in swallowing the suggestion that if a person is 50% kinder than another person as regards fair-trade coffee, then that same person is quite likely to be similar when it comes to fair-trade bananas. If on the other hand such a statement were to be put as a generalised assertion of a person's *entire* charitable disposition to the developing world, it would obviously become less acceptable. Nonetheless, the outlining of altruism as lying in an additively decomposable framework essentially provides a means by which to make scientific judgements in respect of proportional differences in income-controlled kindness.

4.7 CONCLUDING REMARKS

Contrary to the claim that utility gains for the donor pollute the definition of altruism, this discourse has measured how altruistic a person is precisely by that person's ability to experience utility by giving something away.

This thesis has sought to formalise altruism and to develop a technique by which to make more scientific comparisons between individuals. A theoretical landscape has been offered in which the 'income independent' component of altruism can be viewed separately from the 'income influenced' element of altruism. It was shown that to pass judgements based merely on the presence of donations can be misleading in terms of whether or not a person is truly 'generous of spirit'. The theory was further complemented by the design of a clinical game which sought to empirically isolate the income independent element of altruism. The circumstantial nature of altruism rendered

that individual acts of benevolence be viewed as being additive components of a bigger picture. Recognition that a great deal of 'asymmetry of opportunity' likely exists between different individuals led to a matching process being deployed as a means by which to increase the validity of the hypothetical comparisons. In addition, it has been shown that informed judgements of charity can theoretically in the long run be 'utility superior' to uninformed judgements, even in the case when the information reflects negatively on the charitable cause. This in turn builds a case for such information to be regarded as a sort of public good, the deliverance of which is justifiable if enough of the tax-paying population are active donors (i.e. fair-trade consumers).

This thesis sought to sidestep the latency of the relevant constraint by viewing charity in terms of a request being put to a potential donor, and the person thereafter accepting or rejecting the 'offer'. Precisely because the decisions to accept or reject are explicit and binding, the scenario of fair-trade resolves to an accommodating medium. It does however take only a small adjustment of one's thoughts to generalise the situation, because there is precious little difference between this 'accept–reject' setting of charity and the more usual choice-based set-up; it's just a matter of recognising the little voice of one's internal utility auctioneer. As you approach a charity box, the auctioneer asks you, "Do you want to kindly drop a few coins into the box?" If you answer no, you walk on. If you answer yes, the auctioneer dusts off her underused charity hammer and negotiations commence. Having a sense of humour she asks, "How about £20, would you like to put £20 in the box?" You accordingly baulk, after which she smugly replies, "OK, how about a penny, would you prefer to put a penny in the box?" You blushingly decline and inform the auctioneer that it would pointless and possibly rude to deposit such a measly amount – especially when other people might see. This bidding process continues until a figure is finally agreed upon. The auctioneer undertakes various tests of refinement by way of marginal increases and decreases until she is confident that

figure represents your maximised chartable utility (point A in Figure 2.1). There are of course various stochastic elements of the moment that render consistency to be more a radius than a point – satisfying rather than maximising – but that's just cosmetic to the explanation. Consecutively you reach your decision and make your donation. However, why stop there? This should sound very familiar to those who have laboured to turn the pages of Bentham and Mill, because in effect there is no fundamental difference between choice based acts of altruism and choice based acts of *anything* else – and to acknowledge that devalues not a shred of anything. Agents' time horizons may differ, but the sole and categorical reason for action itself never for a moment wavers. "What about non-economic action?". some may ask. The answer is that there exists no action outside of economic action – time and energy are finite, and so they face actions of allocation. Even for something as distant as a person basing their actions on the belief in an afterlife, still it may be argued that the concept of heaven itself is nothing more than an unsubstantiated global utility maximum. We do in economics famously speak of an invisible hand; why not equally anoint the invisible utility auctioneer that lives inside each and every one of us? For the unseen hand surely belongs to her, as it is she who mediates *each and every* action we take – she is what one might honestly call, 'the very person that I am'.

As well as satisfying general intellectual curiosity, the use of an income independent measure of kindness may have considerable practical value in economics. It would be most interesting to see if there is any evidence of differing levels of income independent kindness between various nationalities and social groups; opportunities for applied macro and micro analysis respectively arise. Consider in particular how it might shed some quantitative light into the mysterious black box that often gets referred to as being as a 'social consensus. Indeed, various distinguished economists have accredited much to the existence of this elusive accord. For example, Sen (1999) equates it to the strong

wartime performances of British human development indicators. For a more recent phenomenon, the game theoretical explanation of Libenstein (1982) has been applied to offer reasoning behind why 1980s Germany was able to grow so strongly in the presence of inflexible labour markets. Also, the so-called Scandinavian model that combines healthy growth with a relatively large slice of fiscal redistribution is said by many a wise man and many a fool to be a functional embodiment of market socialism. Others, typically of a less 'state friendly' mindset, prefer to view the very notion of a social consensus and honest leadership as running contrary to the very fabric of economic behaviour: self-interest. For a staunch defence of that perspective see in particular Buchanan and Tullock (1963) and Hayek (1976); or more to the ease of ones eye, simply count the days to the next red-faced resignation from high office. However, by taking repeated games to be the glue, there is perhaps middle ground to be found in considering that 'a group' itself represents the internally negotiated self-interest of its members. Recognition of such may even be said to constitute the difference between self-interest and rationally refined self-interest – from the tightly knit family unit up unto the grand but fragile continental union, evolution is a story of collations, second-order coalitions and the limitations thereof. Thus the decomposability of the model might lend itself favourably to an exploration of the necessary prejudices that a social consensus is likely to actively embody. For example, consider cross-national differences in attitudes towards the presence of foreign workers, and the associated institutions that mediate the assimilation of those essential workers. From this it may emerge that the existence of one type of social consensus runs contrary to the survival of another – for if everybody is a member then nobody is a member.

The claim is not that income independent kindness alone constitutes the entire social consensus variable, merely that it could perceivably be an important ingredient of it, and/or a proxy or an instrument by which to gauge it. If economists wish to pass

judgement by way of accrediting, complementing, criticising or denying the worth of social cohesion, it would surely serve the debate well to make the entity more tangible.

Chapter III: A Tale of Two Farmers: Welfare Scenarios for Fair Trade

3.1 INTRODUCTION

It was the fairest of arrangements; it was the least fair of arrangements. This chapter chronicles the tale of two neighbouring farmers, one who receives a fair-trade order, and another who does not. As was detailed in the literature review, the comfort of conventional reasoning is such that fair-trade may always in the minds of some be haunted by the spectre of oversupply. However, ascertaining the existence of that apparition is clouded by a blanket of mist. It can be hard to spot a ghost in the fog, yet that is what a number of commentators confidently claim they can so effortlessly do.

This chapter has no intention of making a statement to try to either confirm or deny the existence of oversupply. However, its first undertaking will be to conceptually address a few of the complexities that undermine the convenience of considering that a price rise will automatically lead to a positive supply response – it should be kept in mind that *ceteris paribus* is as generous as it is unforgiving. Encapsulated within the reasoning on offer shall be an attempt to shine some light on why the returns to agriculture are what they are.

Having largely abandoned their hostility to the market mechanism, fair-trade organisations respond to the often touted accusation of oversupply by pointing to the fact that licensed traders are themselves profiteers. Hence those traders are themselves subordinate to market principles and it thus follows that they do not (should not) buy what they cannot profitably sell. While a claim such as that should not prevent an eyebrow from being raised, the answer does have an air of credibility about it, and it is a response, the face value consequences of which this chapter will endeavour to evaluate.

Assuming their reasoning to be well founded, the following four questions then emerge:

(i) What does fair-trade mean for the producers whom it does not fold in the warmth of its embrace?

(ii) Under the binding condition of stable supply and demand, is there a welfare externality for non-participants?

(iii) If there is a negative externality, how can it best be visualised so that policy makers can better appreciate the potential trade-offs with which they may be confronted?

(iv) What variables can policymakers influence, and which lie beyond their touch?

An attempt to answer these questions is the crux of this chapter.

Section 3.2 and its incorporated subsections attempt to confront these issues via a number of modelled welfare scenarios. There are two 'master scenarios' in which one farmer will be offered a fair-trade order and the other will not. The first master scenario imposes the condition of the fair-trade farmer having unlimited spare capacity. The second, and much more interactive scenario, imposes the restriction of a capacity restraint upon the fair-trade agent.

The underlying condition of all scenarios is that income may change, but aggregate output strictly cannot. At each step we deploy the standard tenets of welfare economics by which to judge the outcome. It is not necessary to spend any time directly assessing what fair-trade might mean for alterations in income inequality within this model, as it will by the end of the discourse be quite apparent that fair-trade has the potential to send it in either direction. The interesting upshot of this is that it depends upon more than just who receives the fair-trade order and/or who was better off to begin with.

The aim here is not just to show outcomes, but also to try to afford the policy maker a superior vantage point from where to pitch her worth. In places where further intervention is considered, it is paramount that he who is tempted to interfere has an understanding of the trade-offs with which she will be dabbling. Yet, to pre-empt a

point that curtails enthusiasm for intervention, one suggestion of this analysis seems to be that policy makers are not exactly spoilt for choice with respect to variables being readily open to their manipulation.

Reminiscent of what was touched upon in the general introduction, throughout Section 3 numerous opportunities arise to dwell upon the incompleteness of welfare economics. It is a well established fact that the most celebrated cornerstones of that sub-discipline are renowned for having quantified the impossibility of universal satisfaction (seminally, Arrow 1951 and Sen 1970). In addition, it is worth reminding oneself that preference for the strongest welfare statement available to us, that of a Pareto improvement, is itself essentially a value judgement – albeit a strong one; strong in the sense that one would expect few to observe legitimacy in opposing a Pareto improvement when it is a straight choice between that change or no change. However, it should not be forgotten that something as simple as the externality of 'envy' (or jealousy to make it stronger) is enough to psychologically scupper Pareto (see Ng 2004).

As the predominant concern of this model is income, there is perhaps a need to defend it against some of the more philosophical engagements of welfare. Here, monetary wealth is 'relative choice' – nothing more, nothing less – and choice is everything to one who knows how to exercise it. In that respect perhaps it is terminal to many of us – alas the tradition of this thesis is 'liberal' and 'positive' not 'parental' and normative, hence the aim is simply to explain and understand. By dealing exclusively in terms of income, some might regard this chapter as being representative of nothing more than crass utilitarianism. Maybe to a degree it is, but maybe the human being is a crass utilitarian animal – crass, complex, imperfect, and whatever else. The lacing of irony that accompanies a denouement of the divinity of choice, is that even if one did believe oneself to be better off in its absence, few if any will renounce the gift of choice

when offered. Despite the fact that even the most intelligent of individuals cannot count upon their exercising of choice as being flawless past a certain base level, there reaches a stage where it is morally illegitimate and undeniably patronising for an individual to have choices made on their behalf by somebody who 'knows' better. Pure uncertainty is unslayable, and so past a certain benchmark of ignorance, one may argue that it is wholly legitimate to consider choice to be the most appropriate representation of welfare.

Central as those lingering inadequacies may or may not be, this is a thesis more about measurement, and less about the philosophy of wellbeing. The above remarks that have been made in respect to philosophical wellbeing are mischievous points of conjecture, and the reader is invited to treat them as omnipresent concessions of imperfection. The reason for placing these concessions in this opening section rather than within the body text is a matter of general politeness, and the related civility of doing one's best to present a story that flows. It would be too cumbersome to labour them at every perceivable turn.

Notwithstanding its well documented incompleteness, welfare economics offers the most logical and least subjective framework to date. It is consistent and it is coherent. Moreover, it is consistent with itself, because, by its own measure, we prefer the framework of welfare economics not because it is perfect, but rather because it is the least imperfect.

3.2 RETURNS TO AGRICULTURE: THE CURSE OF HOMOGENEITY

What is embodied in the term 'oversupply' is not necessarily an event that more supply equals oversupply. There are plenty of legitimate reasons why more supply is not oversupply, 'productivity' being the categorical gem within that reasoning. While

oversupply is looked upon negatively, economists tend to praise loudly the virtues of productivity – rightfully so as the long run existence/material progress of our species essentially depends upon productivity. However, it is interesting is that one may adore and disdain two concepts which result in essentially the same outcome. The short to medium run consequence of each can result in various asymmetries of social pain. In a sense we have 'good extra supply' and 'bad extra supply'.

The virtue of difference of course resides generally in the long run because there is no finer way to impoverish a nation than to stunt the extra supply that is resonant of productivity. We have at numerous points in this discourse dwelt upon the incompleteness of welfare science. It may however be argued that the greatest incompleteness surpasses the envy based troubles of Pareto and the disagreements over intrinsic and instrumental benefits, and far more manifests itself in the issue of inter-temporal welfare. In a sense, we are returned squarely to the quandary of failed transitivity, unable to rank adjusted outcomes not just for present day people, but also for those who are young or not yet born. What creates comfort for an individual living in a country today is not necessarily of benefit for the future generations within that country. Similarly, hard productive graft in the present day may be forging the morrows 'relative' ease, liberty and leisure. Therefore, if the surplus of fair-trade were to be invested in productivity enhancement, we might not observe data that depicts 'present day' increments in aggregate welfare. At the same time we would likely observe the presence of more supply, and in the process of equating fair-trade as our causal variable find it difficult to say what proportion of that 'extra supply' is actually oversupply – what fraction is 'good supply' and what is fraction is 'bad supply'? If we are then to make a statement regarding aggregate welfare, we would subsequently have to take into account not just the gains of the gainers, but also the possible externality that there is a welfare change for non-participants. Few would disagree that this hypothetical dataset

would be incredibly complex to compile, and to be complete it would have to straddle not just local but global supply and welfare movements. A further associated difficulty is that global trade is so awash with price distortions, subsidies, taxes, and all genres of covert protectionism. Consequently, when one lets drop a term such as 'oversupply' and applies it to something as labyrinthine as international trade, one may be guilty of applying a largely pedagogical term to a context more diverse. This is not to dispute that a consistent framework is an indispensable point of structure for one's thoughts, but merely to assert that pragmatism is an essential ingredient for something as fluid and reactionary as reality. As Keynes so eloquently put it, "*The theory of economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions* (1973, TCW, vol. XII, p.856). Aside from the penultimate word of that statement, which one may be tempted to replace with something more appropriate (such as 'logical'), the overall message is as worthy and clear.

Unlike the oblique intricacies of supply in global production, determining whether or not the actual quantity delivered is acceptable to the market for final consumption is surprisingly straightforward. One need simply spot for one of three categorical possibilities; perfect equilibrium, shortages, or waste. Not least because in exactness it is a moving target, perfect equilibrium is discounted to be as unlikely as it is abstract. However, this is irrelevant, because even if it were not discounted, the direction that this discourse is taking would remain intact. Simple observations are enough to conclude that the foodstuff shelves of Western supermarkets are not (at least at the time of writing) looking bare. The realised outcome is that we are usually left with some degree of waste – actually quite a lot of waste. It would thus seem that in spite of all the trade obstacles that present themselves along the way, the quantity of agricultural produce

that reaches the developed consumption market is enough, or more than enough. In fact, the effectual demand of the Western consumers is generally equivalent to desire. This suggests that one should expect nothing significant from Say's law, and as well creates a severe predicament for the co-operative and monopsony based solutions that were discussed in Chapter I.

Evidently, the more perishable the good the more overtly open it is to being laid to waste. Yet perishability is only the tip of the proverbial iceberg insofar as understanding why one group may act so wastefully with the commercial output of another group. Waste does not come about because Western consumers are suboptimal in their planning, it is simply a grace of wealth that resonates from the different products/services into which different people in different sectors transfer their labour.

Fulfilling a promise made in Chapter I, let us draw a valuable lesson from one of the true cornerstones of development economics, *"It is a matter of historical fact that ever since the [18] seventies the trend of prices has been heavily against the sellers of food and raw materials and in favour of the sellers of manufactured goods."* (Singer 1950, p.477). Prior to offering thoughts on why the Prebisch-Singer Hypothesis (PSH hereafter) is, in some shape or form, here to stay, one might first consider a mild and speculative assault on the concept. Continuation of the PSH may be said to rely on a linear, rather than cyclical, model of development – which may or may not be correct. Alongside this, who is yet to say that technological change will not come up with new non-traditional purposes for agricultural produce? Firstly, the cyclical perspective on development is largely a statement of political and economic relations between East and West, not so much one to do with sectors (see Frank 1998). As for the possibility of new demand being the saviour of the disadvantaged agrarian, think again; here one must tread very carefully. As one scholar of the field aptly explains, *"High food prices benefit only a minority of farmers in the poorest countries. In Africa, South Asia and Central*

America most small farmers consume more food than they produce.[14]" In other words, if food inflation is generalised across all commodities this amounts to nothing more than nominal gains for farmers, which will in real terms end up being more than cancelled out by other draws of consumption. As a complement to this, one might apply a message that returns us squarely to classical Ricardian foundations of economics; upward pressure from food prices constitutes one of the major transmission mechanisms by which inflationary pressures make their way to the industrial wage. This does in turn imply that higher agricultural prices are unlikely to enable farmers to be any more affording of industrial goods. Only productivity within industry can enable that to a systematic degree.

These days one could perhaps take issue with the inclusion of certain raw materials in the PSH, but with respect to agriculture the hypothesis retains its air of prominence within development economics. The PSH equates its reckoning to the observation that the price elasticity of demand for primary commodities is generally much lower than for manufactured goods. Despite all the attention the hypothesis has been the recipient of its eminence and its age (see Lutz 1999), one cannot help but feel that there is yet more to be mined from the core of its message. In particular, viewed in the light of the present day, the concept swerves slightly from what at least one of its authors originally took it to stand for. It may be argued that the successful industrialisation of many former developing countries clearly illustrates that, while once manifest in a so-called 'North–South' divide, the PSH discrepancies of income are wholly blind to national borders. Recognition of this may be taken as a swipe at the value-laden taint of political economy that at times did appear to punctuate Mr. Prebisch's famous, but often misinterpreted decries of dependency (see Dosman 2008).

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[14] Christopher Barrett, Professor of Agriculture, Cornell University. Letter to the editor of the Economist, April 12th - 18th 2008, print edition.

An argument will now be put forth to suggest that the fundamentals of agriculture are such that the main conclusion of the PSH is intact and largely unalterable, especially while a country remains underdeveloped – cause *and* effect. First and foremost, there is the governing actuality of the agricultural marketplace so closely resembling the textbook (Marshellian) conditions of a perfectly competitively market. In particular, barriers to entry are negligible and the goods produced are relatively homogeneous. This leads to a case in which it is not surprising that the marginal returns are so meagre – simply they are competitive. If a government wishes to prop up the returns to agriculture, it may turn to the usual suspects of protectionism, tariffs, quotas, subsidies, safety standards (fictitious or otherwise)….etc. The affordability of these costly policies is such that they are more open to wealthier countries. Of related relevance, the social and democratic structures of many of those wealthy countries are such that the farmer's voice is, to say the least, difficult to ignore.

Governments may of course also support industry by similar means to those just listed; however there are two related points of industrial engagement that are structurally unavailable to agriculture. Firstly, a double-edged sword if ever there was one, some elements of industry receive the protection of intellectual property rights (IP). Possibilities for measures such as these cannot be deployed outright in a market of homogeneous goods (GM might alter this), hence the agricultural producer is hit twofold by homogeneity. Initially, through the price sensitivity of the final consumer, and again because if a farmer wishes to purchase industrial goods, he, like everybody else must at times pay the returns associated with an institutionally enshrined monopoly. IP rights are however only the veneer of a much deeper story, and what is being gravitated towards is an explanation that rests more on hard structural characteristics. Because, while IP is viewed as being interventionalist rather than structural, consider that though IP is a dish served by the artificial hand of government, without the

structural characteristic of heterogeneity, a serving such as that would be patiently impossible.

On entering the market of final consumption the assumption of homogeneity can begin to wane, or at least be tweaked to appear to wane. Some goods strongly retain their homogeneity (e.g. bananas), while for others heterogeneity seeps evermore into the picture, e.g. coffee to a moderate degree and wine to an extensive degree. Be it genuine or artificially stimulated, a lack of homogeneity implies the existence of multiple demand curves of differing elasticities. This affords the supplier the opportunity to engage in various forms of price discrimination. Hence, in respect of consumption, heterogeneity is the enemy of waste because the existence of heterogeneity is the foremost requisite which facilitates a situation in which an increase in wealth is not solely associated with purchasing more of something; rather it is allied with the possibility of substitution of higher quality purchases. The problem with much of agriculture is precisely that strong homogeneity denies or severely hinders the possibility of that avenue of value-added relief.

When one gives thought to the returns to agriculture, care must be taken to not be distracted by outliers who perform well due to a large concentration of property ownership and/or the ability to produce a very specialised product. What one must recognise for comparison, is not the overall value of the sector, but rather that the body of labour (landless and otherwise) is divided by the overall value of the sector. Via two *natural* barriers of entry this 'sale of labour' perspective serves to further the argument being made in this section of the thesis.

Firstly, the capital intensive nature of industrial production implies that the number of people who can chase a particular commercial idea is much more limited than it is in agriculture. Secondly, and perhaps more importantly, *the barrier of learning* weighs in to afford enhanced returns to suitably skilled industrial and service labourers. Not only

is it a contemporary requirement that most of those labourers obtain a minimum level of education before they can compete effectively in their markets. Also, as 'learning by doing' takes root, industrial and service based companies have a natural incentive to take extra care in discouraging labour turnover, the bidding up of wages being an integral part of that discouragement. To say that these are natural shrouds of protection that agricultural workers do not benefit from is an understatement. It is wholly more accurate to state that these are natural shrouds of protection which the agricultural worker *cannot* benefit from.

Ultimately, the 'non-sheltered' producers of agricultural goods are receiving something close to their competitive marginal returns, whereas those who sell their labour in higher value-added sectors receive wages above and beyond their textbook marginal products. Hence, when these two groups come together to exchange the respective fruits of their labours, it is hardly surprising that one walks away from the trade so much better off than the other.

The reason why farmers in developed counters do not suffer this fate is because their marginal products are propped up by the unnatural hand of government. The same pressures on agrarian returns theoretically exist in the rich world; it just happens that, typically under democratic pressures, governments anaesthetise that pain (e.g. through CAP). The cost of that anaesthetic is a pinch that developing world producers and rich country consumers each feel in some shape or form. Evidently, the former probably feel the teeth of that bite to be sharper than does the latter.

The discussion around the PSH and general returns to agriculture that has been constructed here is intended to go further than citing various elasticities as the cause of the declining terms of trade. Reasoning has been put forth to assert that the PSH and its predictions of relative agrarian impoverishment will remain in place because the most important causes behind those sectorial elasticities are structurally entrenched. Nothing

definitive has yet appeared to suggest that it is time to disown the core message of the PSH. Moreover, the presence of newly industrialised 'late-comers' lends itself generously to the perspective that this conflict of relative income is no longer (or ever really was) a North–South issue – at its nucleus it is more a sectorial matter. The tendency of the originators to write in terms of 'North–South' almost certainly stems from the time of their writings; back then, that particular divide was a near perfect proxy for the industrial and agrarian divide. Today, by the hour, it becomes less so. In unbroken accordance with economic history, it is valid to argue that developing countries which remain overly infatuated by the production of agricultural goods are not doing themselves any long term favours. Admitting as much does not condemn fair-trade; merely it suggests that fair-trade organisers should not just deny the problem of oversupply and police the quandary of weak returns, but should in addition make a concerted effort to deploy their funds such that fitter people will be better prepared for the possibility of later selling their labours in a different sector. A statement such as this is particularly relevant to landless labourers.

Where does this lead us in terms of a welfare model? Well, it must be confessed that we might struggle to detect oversupply, especially in the presence of productivity investment and a complex global trade structure. What can be said is that we are presented with a status quo, an equilibrium between buyers and sellers. Next, the 'newly introduced demand' for fair-trade does not represent new demand per se, rather it is a new preference for the same fundamental product. That is to say, if a person switches from conventional coffee to fair-trade coffee the increased demand for fair-trade coffee should be met with a perfectly equal decline in the demand for conventional coffee. There is no reason to believe that any more of anything is being demanded (consumed) because of fair-trade. Now, if under these conditions we take at face value the proposal that the liberated profit motive is sufficient to prevent buyers from buying more than

they can feasibly sell, some will regard acceptance of that as being a statement of optimism or naivety. However, I feel it is better to take it as an assumption that can be used to develop one scenario based model. Accepting such a statement to be the case, this all amounts to a model that must be (i) zero-sum in supply and (ii) non-zero-sum in producer income. The remainder of this chapter attempts to construct something from these two conditions, and by generating a number of sub-scenarios, considers what fair-trade implies for aggregate welfare gains, and in turn for welfare transfers between participating and non-participating producers. The next section breathes life in the model.

3.3 SCENARIO 1: FAIR-TRADE FARMER WITH INFINITE CAPACITY

We are faced with two farmers, Farmer A and Farmer B. The baseline equations from which the model is to be built are:

$$Q_A + Q_B = E_{SD} \qquad\qquad Y_A = (P_M)(Q_A)$$

$$Y_A + Y_B = Y \qquad\qquad Y_B = (P_M)(Q_B)$$

where:

Y_A is Farmer A's gross income.

Y_B is Farmer B's gross income.

Y is the total farming income of this modelled economy.

Q_A is Farmer A's supply.

Q_B is Farmer B's supply.

E_{SD} is equilibrium in the final market – or more precisely, the present stable condition of supply and demand in the final market, the status quo.

With no fair-trade and only a conventional market, let us assume that both farmers receive the same 'one market' price (P_M) for their respective crops, in which case the income of both farmers is determined solely by the amount they produce and their respective levels of productivity. To keep things simple, productivity is held constant as this means there is no need to complicate the message by having to bring in various dynamic production functions. This assumption may be precarious in terms of international differences, but for localised comparisons there is no obvious reason to consider it unacceptable.

A fair-trade order is placed with Farmer A but not Farmer B. Under the condition of 'unlimited spare capacity', Farmer A can accommodate the order without having to cut back on the conventional order.

$$(Q_A + Q_{FT}) + Q_B = E_{SD} + \hat{Q}_{FT}$$

Where $P_{FT} > P_M$ because $P_{FT} = P_M + \varepsilon$

$P_{FT} = $ Fair-trade price

$\varepsilon = $ Fair trade mark-up

$\hat{Q}_{FT}$ momentarily shows up as a disequilibrium residual on the right-hand side of the quantity equation. This represents the fact that the conventional trader will face lower demand for their product due to the preference shift that has occurred in the final market. $\hat{Q}_{FT} = Q_{FT}$ so, when $\hat{Q}_{FT}$ moves to the left-hand side of the equation to restore equilibrium, it carries with it a burden of loss which gets split between the farmers in any number of possible proportions.

$$((Q_A + Q_{FT}) + Q_B) - \hat{Q}_{FT} = E_{SD}$$

Where, $\hat{Q}_{FT} = \alpha Q_{FT} + (1-\alpha)Q_{FT}$ and $0 \leq \alpha \leq 1$

$$((Q_A + Q_{FT}) + Q_B) - (\alpha Q_{FT} + (1-\alpha)(Q_{FT})) = E_{SD}$$

Letting $\alpha Q_{FT} = {}^A Q_{FT}$ *and* $(1-\alpha)Q_{FT} = {}^B Q_{FT}$

α is taken to be an exogenous variable that determines, respectively, the required quantity adjustments of Farmer A $({}^A Q_{FT})$ and Farmer B $({}^B Q_{FT})$, which materialise as a result of the fair-trade order. Note that for Farmer A, ${}^A Q_{FT}$ represents only part of the net quantity adjustment, because she will be receiving a fair-trade order, whereas for Farmer B, ${}^B Q_{FT}$ dictates her entire net quantity adjustment.

Placed accordingly:

$$(Q_A + Q_{FT} - \alpha Q_{FT}) + (Q_B - {}^B Q_{FT}) = E_{SD}$$

Letting $(Q_A + Q_{FT} - {}^A Q_{FT}) = {}^* Q_A$ *and* $(Q_B - {}^B Q_{FT}) = {}^* Q_B$

$$\Rightarrow {}^* Q_A + {}^* Q_B = E_{SD} \text{ (original equilibrium intact)}$$

where ${}^* Q_A$ and ${}^* Q_B$ are the new post fair-trade quantities associated to each farmer, so:

$$\Delta Q_A = {}^* Q_A - {}^A Q \quad and \quad \Delta Q_B = {}^* Q_B - Q_B$$

$${}^* Q_A = Q_A + Q_{FT} - \alpha Q_{FT}$$

$${}^* Q_B = Q_B - (1-\alpha)(Q_{FT})$$

$${}^* Q_B = Q_B - (Q_{FT} - \alpha Q_{FT})$$

$${}^* Q_B = Q_B - Q_{FT} + \alpha Q_{FT}$$

$$\frac{\partial {}^* Q_A}{\partial \alpha} = -Q_{FT} \qquad \frac{\partial {}^* Q_B}{\partial \alpha} = Q_{FT} \qquad Evidently, \ \frac{\partial {}^* Q_B}{\partial \alpha} > 0 \ and \ \frac{\partial {}^* Q_A}{\partial \alpha} < 0$$

Assuming that these farmers have a preference for income over leisure at their current positions of wealth, it's now straightforward to see that α serves as kind of a damage allocation parameter to Farmer B. B's quantity decline is minimised (neutralised) at $\alpha = 1$, and maximised at $\alpha = 0$. Of direct consequence to the zero-sum condition, A's quantity gains are minimised at $\alpha = 1$ and maximised at $\alpha = 0$ which is plainly visible via the straightforward implication that $\Delta Q_A = -\Delta Q_B$.

To see what this means in terms of actual welfare, we have to look at the reflective changes in income, the major difference being that unlike the quantity set-up, the income adjustments are potentially non-zero-sum. That is to say, unlike E_{SD} in the quantity equation, the aggregate level of income (Y) in the producer's economy $(Y_A + Y_B = Y)$ is permitted to change.

The original income equations, $Y_A = (P)(Q_A)$ and $Y_B = (P)(Q_B)$ change such that, after the introduction of fair-trade, the income identity for the producer's economy is written as $^*Y_A + {}^*Y_B = {}^*Y$. $^*Y_A$ is A's new post fair-trade income, and $^*Y_B$ is B's post fair-trade income. Dealing first with Farmer A's income, the changes appear as follows:

$^*Y_A = Y_A \pm \Delta Y_A$.

$^*Y_A = P_M Q_A - \alpha P_M Q_{FT} + P_M Q_{FT} + \varepsilon Q_{FT}$

$$\frac{\partial {}^*Y_A}{\partial \alpha} = -p_M Q_{FT}, \qquad \frac{\partial {}^*Y_A}{\partial \alpha} < 0$$

$$\frac{\partial {}^*Y_A}{\partial \varepsilon} = Q_{FT}, \qquad \frac{\partial {}^*Y_A}{\partial \varepsilon} > 0$$

$$\frac{\partial {}^*Y_A}{\partial Q_{FT}} = -\alpha P_M + P_M + \varepsilon \qquad \frac{\partial {}^*Y_A}{\partial Q_{FT}} > 0$$

Appendix 3.1 depicts the full generation of Farmer A's income. Dealing next with Farmer B's income:

$^*Y_B = Y_B \pm \Delta Y_B \Rightarrow \Delta Y_B = ^*Y_B - Y_B$. However, as we know in this scenario that B will not be receiving any extra income from fair-trade, and the best he could possibly do is to maintain his current income (i.e. the expression is maximised at $\Delta Y_B = 0$, for which $^*Y_B = Y_B$), to avoid potential confusion, let us reverse the sign to make it $\Delta Y_B = Y_B - ^*Y_B$. Accordingly, Farmer B's new income can be written as so:

$$^*Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT}$$

$$\frac{\partial ^*Y_B}{\partial \alpha} = P_M Q_{FT} \Rightarrow \frac{\partial ^*Y_B}{\partial \alpha} \geq 0$$

(The fair-trade mark-up (ε) is of course inconsequential to $^*Y_B$)

What is more telling in terms welfare adjustments is:

$$\frac{\partial ^*Y_B}{\partial \alpha} = -\frac{\partial ^*Y_A}{\partial \alpha}$$

This condition informs us that alterations in welfare are zero-sum in relation to the proportional adjustment factor of the fair-trade order (α). In other words, the marginal income gains that Farmer A receives from decreases in alpha, are exactly mirrored as marginal declines in Farmer B's income. This dictates that the value of alpha alone creates no aggregate value; it represents only a transfer. Moreover, digging further beneath the surface there is a less than subtle indication that Pareto optimality will not be satisfied for any perceivable value of alpha other than 1. This will become ever more apparent when we move to evaluate aggregate income change, which follows evaluation of Farmer B's individual welfare alterations with respect to the size of the fair-trade order.

$$^*Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT}$$

$$\frac{\partial^* Y_B}{\partial Q_{FT}} = -P_M + \alpha P_M \quad \therefore \quad \alpha = 1 \Rightarrow \frac{\partial^* Y_B}{\partial Q_{FT}} = 0, \quad \forall \ \alpha \neq 1 \Rightarrow \alpha < 1 \ \Rightarrow \frac{\partial^* Y_B}{\partial Q_{FT}} < 0,$$

For all possible values of α except for 1, the size of the fair-trade order reduces the income of Farmer B, thus reinforcing the actuality that Pareto will be recognised only by $\alpha = 1$. However, what emerges of most relevance is made evident by contrasting the two individual income derivatives with respect to the demanded quantity of fair-trade. We are of course no longer dealing in a zero-sum transfer, but note that while the size of the fair-trade order is good for both Farmer A and the overall economy, at the same time it places a larger threshold of risk on the non-participant.

Comparing $\quad \dfrac{\partial^* Y_B}{\partial Q_{FT}} = -P_M - \alpha P_M \quad$ to $\quad \dfrac{\partial^* Y_A}{\partial Q_{FT}} = -\alpha P_M + P_M + \varepsilon$,

this time, the gains of the gainer are such that they are greater than losses to the loser, i.e. the pie as a whole has grown. The gains will exceed the losses by a factor of εQ_{FT}. Referring this to the Kaldor-Hicks criterion, in this instance both parts of the test are now satisfied. Theoretically, the loser can be profitably compensated by the winner (Kaldor), and in addition the loser is unable to profitably bribe the winner to oppose the change (Hicks). Remember of course, that *just because she can compensate him, it doesn't mean she does*, and if she is forced to compensate him there may be an intervention cost that will have to be subtracted.

Turning next to the economy as a whole:

$$^{*}Y_{A}+{}^{*}Y_{B}={}^{*}Y$$

$$^{*}Y = ((P_{M})(Q_{A}-{}^{A}Q_{FT}) + (P_{FT})(Q_{FT})) + ((P_{M})(Q_{B}-{}^{B}Q_{FT}))$$

$$^{*}Y = ((P_{M})(Q_{A} - \alpha Q_{FT}) + (P_{FT})(Q_{FT})) + ((P_{M})(Q_{B} - (1-\alpha)(Q_{FT}))$$

$$^{*}Y = ((P_{M})(Q_{A} - \alpha Q_{FT}) + (P_{M} + \varepsilon)(Q_{FT})) + ((P_{M})(Q_{B} - (1-\alpha)(Q_{FT}))$$

$^{*}Y = Y \pm \Delta Y$, and since fair-trade can only increase aggregate income, $^{*}Y = Y + \Delta Y$

and so $\Delta Y = {}^{*}Y - Y$. Some readers may find it helpful to look at the equation in terms of

change, $\Delta Y = ({}^{*}Y_{A}+{}^{*}Y_{B}) - (Y_{A} + Y_{B})$, so if one cares to do so, prior to touching the

derivatives one may glance at the full change equations, and full income equation

expansion in Appendix 3.2.

$$^{*}Y = P_{M}Q_{A} - P_{M}\alpha Q_{FT} + P_{FT}Q_{FT} + P_{M}Q_{B} - P_{M}Q_{FT} + P_{M}\alpha Q_{FT}$$

$$\frac{\partial ^{*}Y}{\partial \alpha} = -P_{M}Q_{FT} + P_{M}Q_{FT} \quad \Rightarrow \quad \frac{\partial ^{*}Y}{\partial \alpha} = 0$$

$$\frac{\partial ^{*}Y}{\partial Q_{FT}} = -P_{M}\alpha + P_{FT} - P_{M} + P_{M}\alpha \quad \Rightarrow \quad \frac{\partial ^{*}Y}{\partial Q_{FT}} > 0$$

Again, as could be observed from the opening up of Farmer B's new income, $\alpha = 1$

stands firm as the governing requisite for generating a Pareto improvement. Therefore,

along with alpha's irrelevance to the size of the pie as a whole, this indicates that

preferring a value of $\alpha = 1$ is the strongest welfare judgment that can be extracted from

this model in this scenario. However, one should note that the value of Q_{FT} which

maximises both $^{*}Y$ and $^{*}Y_{A}$ (limited in reality but not theory), is the same as that which

most endangers the income of Farmer B ($^{*}Y_B$). In theory, if $\alpha = 0$ and $Q_{FT} = Q_B$, fair-trade could hypothetically wipe out the entire income of a non-participating producer. This may be just a theoretical extremity of the model, but it should nonetheless be enough to have fair-trade organisers and supporters pause for thought.

3.4 SCENARIO 2: FAIR-TRADE FARMER WITH FINITE CAPACITY

The purpose of this scenario is the same as for the previous section, and in addition we may compare the welfare movements in this scenario with the welfare changes that were observed in the previous one. It will be shown that a lack of production capacity serves to limit the potentially negative impact that fair-trade can exhibit on the excluded producer. The trade-off is that the condition of limited capacity will complicate matters for the fair-trade producer and actually expose her to a potential loss.

As the path is longer and more winding than in the previous scenario, let us set up the notation and state a clear aim regarding what we desire to learn from this quantity arrangement.

In the full spare capacity scenario $(Q_A + Q_{FT} - {}^{A}Q_{FT}) = {}^{*}Q_A$ and $(Q_B - {}^{B}Q_{FT}) = {}^{*}Q_B$ became our post fair-trade quantities. What we now want to derive are the quantity adjustments that relate to limited spare capacity (LC) on the part of the fair-trade recipient, respectively ${}^{*LC}Q_A$, and ${}^{*LC}Q_B$.

A number of additional conditions that define this scenario are:

$\overline{Q}_A =$ The maximum capacity of Farmer A (full employment). Maximum capacity is, by definition, equal to what the farmer is already producing plus all spare capacity:

$$\overline{Q}_A = Q_A + u_1$$

$$u_1 \neq \infty \quad (Q_A \leq \overline{Q}_A)_{t=1} \Rightarrow u_1 > 0$$

$Q_A = \overline{Q}_A - u_1$ shaped so as we can regard u_1 as being the pre-fair-trade unemployment of Farmer A. Applying further form so as to differentiate it from the previous scenario, limited capacity is such that the farmer is not going to be unable to fulfil her fair-trade production obligations without an adjustment of what they were previously producing:

$$(Q_A + Q_{FT} > \overline{Q}_A)_{t=1+n} \Rightarrow Q_{FT} > u_1$$

This renders the condition of limited capacity binding and relevant. Note, nothing is being assuming as regards limiting the capacity of Farmer B. This is justified because, as is the case with many two agent models, the second person essentially represents 'everybody else'. By that measure, Farmer B represents *all local* farmers who miss out on fair-trade. He is a composite producer in the same way that microeconomics typically makes use of a 'composite good' $(\therefore u_B = \infty)$.

Commencing with the same formulation as before, a fair-trade order is placed with Farmer A:

$$(Q_A + Q_{FT}) + Q_B = E_{SD} + \hat{Q}_{FT}$$

The $(Q_A + Q_{FT} > \overline{Q}_A)$ condition dictates that this time Farmer A cannot accommodate the order outright without releasing some conventional orders:

$$(Q_A + Q_{FT} - Q_{Con}) + Q_B = E_{SD} + \hat{Q}_{FT} - \hat{Q}_{Con}$$

Q_{Con} = the amount of conventional sales that Farmer A ejects in order to participate in fair-trade. As before, the 'circumflex variables' are the scars of disequilibrium that must eventually be repatriated to the left-hand side of the equation.

Maintaining the previous set up of $\hat{Q}_{FT}$, recall that $\hat{Q}_{FT} = \alpha Q_{FT} + (1-\alpha)Q_{FT}$ where $0 \leq \alpha \leq 1$ and $\alpha Q_{FT} = {}^{A}Q_{FT}$ and $(1-\alpha)Q_{FT} = {}^{B}Q_{FT}$.

$$(Q_A + Q_{FT} - Q_{Con} - {}^{A}Q_{FT}) + (Q_B - {}^{B}Q_{FT}) = E_{SD} - \hat{Q}_{Con}$$

For the time being let's pretend that $\hat{Q}_{Con}$ does not exist in this model – we will return to it in due course. Now, in recognition of the role that uncertainty almost always plays, one needs to pause for thought because the scenario potentially becomes unstable. The sequential reasoning is this: when Farmer A ejects a quantity of conventionally priced produce, is the amount she opts to discard personally optimal? Optimality in this case is defined to be a situation in which she is left in a position of full employment. Formally, we wish to consider the divergent variable u_2 between the following two conditions (i) and (ii):

(i) $(Q_A + Q_{FT} - Q_{Con} - {}^{A}Q_{FT}) = \overline{Q}_A$

$Q_A = \overline{Q}_A - u_1 \Rightarrow (Q_{FT} - Q_{Con} - {}^{A}Q_{FT}) = u_1$

$u_1 + \Delta u_1 = u_2$

$(Q_A + Q_{FT} - Q_{Con} - {}^{A}Q_{FT}) = \overline{Q}_A \Rightarrow u_1 \rightarrow 0 \Rightarrow u_2 = 0$

where u_2 is described as transitional unemployment, and it is the defining characteristic of (i) that u_2 resolves to be zero.

(ii) $(Q_A + Q_{FT} - Q_{Con} - {}^A Q_{FT}) < \overline{Q}_A \Rightarrow (Q_{FT} - Q_{Con} - {}^A Q_{FT}) < u_1$

$(Q_A + Q_{FT} - Q_{Con} - {}^A Q_{FT}) = \overline{Q}_A - (u_1 + \Delta u_1)$

$(Q_A + Q_{FT} - Q_{Con} - {}^A Q_{FT}) = \overline{Q}_A - u_2$

The defining characteristic of equation (ii) is $u_2 \neq 0$.

Specifying these two equations gives rise to a design that will facilitate a better 'real world' understanding of what certain 'soon to be derived' variables will represent. The first condition (i), is the definitional representation of theoretical optimality; precisely because Farmer A resolves to be in a position of full employment post the emergence of fair-trade $(u_2 = 0 \Rightarrow \Delta u = u_1)$, all of her unemployment is eradicated.

One of the key problems with tacitly assuming solution (i) is that for it to consciously materialise, amongst other things, Farmer A would have to possess a flawlessly accurate forecast of the value of ${}^A Q_{FT}$ (i.e. know or perfectly predict the value of α, bearing in mind that the value of Q_{FT} is already known to her); only then would she be able to deliberately tailor her rejection of Q_{Con} to suit α in such a way as to have herself resolve to a position of zero unemployment.

This exposes a raw nerve of economic theory, as many would regard the blind importation of equation (i) to be the implicit adaptation of two very familiar scoundrels; *perfect information* and *perfect rationality*. However, the politeness of this model is that it requires neither an ostentatious denial of, nor a beleaguered bow to, either of those two related rascals. Rather, by actively accommodating *a spectrum of rationally associated values*, the model may be used to craft scenarios which inspect for direct and indirect welfare externalities with respect to an actor's varying ability to act rationality. The touch of impoliteness that lingers is that there is a cumbersome overlap between

'forecasting rationality', 'attitude to risk', and 'completeness of information'. This quandary is of course not unique to this thesis – it prevalent in a lot economic theory.

Progressing the story, Farmer A now has to make a decision as to how much conventional quantity to eject. The values of Q_A, Q_{FT} and $\overline{Q}_A$ are all know to her, and so she bases her choice of Q_{Con} on her expected value of $^A Q_{FT}$. Her gamble takes the following form:

$$Q_{Con} = Q_A + Q_{FT} - E(^A Q_{FT}) - \overline{Q}_A +^{*op} u_2 \quad \text{in which } ^{*op} u_2 \text{ is a component of } u_2 \text{ that may or}$$

may not exist; the choice of notation will become clear shortly)

Bearing in mind that the only two variables which Farmer A holds sway over are Q_{Con} and $E(^A Q_{FT})$, the next step is to measure how well Farmer A was able to anticipate the market adjustment. By generating the actual, minimum and maximum levels of transitional unemployment (u_2), we are able to produce for comparison a number of solutions – how Farmer A performed in relation to how poorly or how faultlessly she could have performed. In undertaking this exercise we will also uncover that transitional unemployment is itself comprised of two different types of unemployment.

Rearranging quantity equations (i) and (ii) generates Farmer A's optimal and suboptimal choices. Taken from equation (i) it is straightforward enough to state what is optimal; simply, Farmer A is perfectly correct in her statement of the expected value variable:

$$^{op} Q_{Con} = Q_A + Q_{FT} -^A Q_{FT} - \overline{Q}_A$$

which is optimal because, $E(^A Q_{FT}) =^A Q_{FT} \Rightarrow E(\alpha) = \alpha$

There is no unemployment precisely because $^{op}Q_{Con}$ may take a theoretically negative value. If $^{op}Q_{Con}$ is negative, the number which is required to balance it at zero makes for our first indication that some transitional unemployment will be present. It is of course impossible for the farmer to reject a negative value. Hence, we have to make a distinction between theoretical optimality, which we shall keep as $^{op}Q_{Con}$ and practical optimality, which we will distinguish with a star $^{*op}Q_{Con}$. The disparity is that practical optimality is strictly non-negative and becomes zero whenever its theoretical counterpart is negative $(^{op}Q_{Con} < 0 \Rightarrow ^{*op}Q_{con} = 0)$. The negative value is however highly relevant to this story; it represents a net stock deficit that has been created by a market reshuffle that has fallen strongly in favour of the non-fair-trade farmer (high alpha):

$$\frac{\partial ^{op}Q_{Con}}{\partial \alpha} < 0$$

When $^{op}Q_{Con}$ is negative, it depicts the amount of unemployment that Farmer A will have to contend with even if she is flawlessly accurate in her gamble on alpha. In practical terms, something must be added to $^{op}Q_{Con}$ so as to minimise its value at zero. In essence, what gets added is a component of transitional unemployment; let us state it as $^{*op}u$ (the choice of notation will be explained shortly):

$$^{op}Q_{Con} = Q_A + Q_{FT} - {}^AQ_{FT} - \overline{Q}_A$$

$$^{*op}Q_{Con} = Q_A + Q_{FT} - {}^AQ_{FT} - \overline{Q}_A + {}^{*op}u$$

$$\forall ^{op}Q_{Con} < 0 \quad \Rightarrow \quad ^{op}Q_{Con} + {}^{*op}u = 0$$

$$\forall ^{op}Q_{Con} \geq 0 \quad \Rightarrow \quad ^{*op}u = 0 \quad \Rightarrow \quad ^{op}Q_{con} = {}^{*op}Q_{con}$$

This permits us to construct the real value of the rejected quantity. We simply replace the actual value of $^A Q_{FT}$ with an expected (gambled) value:

$$Q_{Con} = Q_A + Q_{FT} - E(^A Q_{FT}) - \overline{Q}_A + {}^{*op}u_2$$

$$^{*op}u_2 = Q_{Con} - Q_A - Q_{FT} + E(^A Q_{FT}) + \overline{Q}_A$$

Evidently, $u_2 \geq {}^{*op}u$ because $^{*op}u$ is best that Farmer A can do.

Amongst other things, that there is a difference between theoretical and practical values informs us that 'part' of Farmer A's unemployment comes about through no fault of her own. This means that we cannot just look at 'unemployment' as one entity and cite that as the parameter by which Farmer A's rational response is measured. Rather, we must analytically separate the proportion of unemployment for which the farmer is directly responsible from that which she has no control over. The only feasible place for the remaining element of unemployment to hide is inside $E(^A Q_{FT})$, and this will be extracted shortly. In order to first gain an overview of that what we intend to extract, let us define three types of transitional unemployment.

Theoretically Optimal Unemployment: $^{op}u_2 = {}^{op}Q_{Con} - Q_A - Q_{FT} + {}^A Q_{FT} + \overline{Q}_A$. Bound by the balancing possibility of $^{op}Q_{con}$ being negative, this will always be zero, hence it is simply a control variable. Following previous notation, Practical Optimal Unemployment: $^{*op}u_2 = {}^{*op}Q_{Con} - Q_A - Q_{FT} + {}^A Q_{FT} + \overline{Q}_A$. Bound by the lower cap of zero that is embedded in $^{*Op}Q_{con}$, and evident from the condition, $\forall^{op}Q_{Con} < 0 \Rightarrow {}^{op}Q_{Con} + {}^{*op}u = 0$, when $^{op}Q_{con}$ is negative, its value will be inversely mirrored by Practical Optimal Unemployment $^{*op}u_2$. $^{*op}u_2$ can be described as being the

unemployment that is not the fault of the fair-trade farmer; it is the best she can expect *irrespective* of her own abilities. In other words, this unemployment stems only from what Farmer A would regard as being a painful market reshuffle (high alpha), and has nothing whatsoever to do with her ability to anticipate the market reshuffle.

$$\frac{\partial^{op} u_2}{\partial \alpha} = Q_{FT} \quad \frac{\partial^{op} u_2}{\partial \alpha} > 0$$

The additional component of u_2 may therefore be referred to as Fault Based Unemployment $(^F u)$. This is the unemployment that results solely and directly from the fair-trade farmer making an inaccurate gamble on the market reshuffle (underestimation of alpha). We can discover its hiding place and define it by opening up the only variable where Farmer A can be at fault, $E(^A Q_A)$:

$$^F u = {}^A Q_{FT} - E(^A Q_A)$$

$$Q_{Con} = Q_A + Q_{FT} - E(^A Q_{FT}) - \overline{Q}_A + {}^{*op} u_2$$

$$Q_{Con} = Q_A + Q_{FT} - (^A Q_{FT} - {}^F u) - \overline{Q}_A + {}^{*op} u_2$$

$$Q_{Con} = Q_A + Q_{FT} - {}^A Q_{FT} + {}^F u - \overline{Q}_A + {}^{*op} u_2$$

It is the addition of Fault Based Unemployment to Practical Optimal Unemployment that generates Total Transitional Unemployment:

$$^{*op} u + {}^F u = u_2$$

$$Q_{Con} = Q_A + Q_{FT} - {}^A Q_{FT} - \overline{Q}_A + (^{*op} u_2 + {}^F u)$$

$$Q_{Con} = Q_A + Q_{FT} - {}^A Q_{FT} - \overline{Q}_A + u_2$$

It is therefore plain enough to see that $^{*op}Q_{Con} = Q_A + Q_{FT} - {}^AQ_{FT} - \overline{Q}_A + {}^{*op}u$ is optimal

precisely because $^{*op}Q_{Con} \Rightarrow E(^AQ_{FT}) = {}^AQ_{FT} \Rightarrow {}^Fu = 0$, and thus by definition $^{*op}Q_{Con}$

implies that none of the resulting unemployment is the fault of the farmer; in practice it

is the best she can do.

So that Fault Based Unemployment and the assumption behind it is clearly

understood, let us define a suboptimal outcome as so: $E(^AQ_{FT}) < {}^AQ_{FT} \Rightarrow E(\alpha) < \alpha$,

which dictates that ^Fu is present by definition. *This also imposes the assumption of 'no*

overestimation'. This is justified as the application of $E(\alpha) > \alpha$ might give rise to an

untenable condition of $^{*LC}Q_A > \overline{Q}_A$. Admittedly, reality may differ, and this assumption

is placed here mainly to assist with the flow of the story; later, in its own sub-scenario,

it shall be relaxed.

For reasons that require some elaboration, Fault Based Unemployment is indicative

of naivety and/or risk averseness, and/or completeness of information. To say the least,

the relationship between these entities seldom affords the smoothest of engagements,

and here is no exception. In terms of this model, the most intuitively friendly way to

deal with this problem of entanglement comes via a description of what might be aptly

referred to as *the tyranny of zero in respect to $E(^AQ_A)$*. When $^AQ_{FT} - {}^Fu = 0$, under

present assumptions, ^Fu is maximised, and we can read from this either 'extreme risk

averseness' and/or 'pure naivety', or some weighted combination of the two. That is to

say, we may choose to say that the farmer is possibly very short-sighted and so

anticipates no repercussions in the form of the $^AQ_{FT}$ market adjustment (naivety).

Alternatively, she does actually expect some repercussion from $^AQ_{FT}$, but is too anxious

about damaging her commercial reputation to risk accepting more orders than she can

fulfil, and so hedges the safest bet she could possibly make (extreme risk averseness). To summarise, under the condition of no overestimation, pure naivety and/or extreme risk averseness is associated with low and inaccurate gambles on alpha.

Quantitatively, variables are what they are. Opinions may however differ in respect of descriptive interpretations. How one chooses to interpret certain interactive variables in this model is relevant to the overall message of this chapter. With the aim of breathing further life into this economic fairytale, let us indulge some of the reasoning that underpins how it is proposed we extract meaning from the fault based variable.

Consider the following arrangement; it is the vice of a world dominated by probabilities that one may simultaneously be 'statistically correct' in the moment, but 'outcome incorrect' in a later moment – *rational but wrong*. In addition, 'willingness to risk' automatically implies neither success nor failure, whereas the term 'rational action' does carry with it a general air of success – at least, what one may refer to as 'statistical ex-ante success'. It is indeed the difference between 'realised success' and 'statistically ex-ante (best response) success that culminates in failure' which generates the problem of declaring an agent's actions to be either rational or irrational. Furthermore, while 'incomplete information' feeds into the picture as regards both naivety and the person's willingness to risk, 'incomplete information' is itself a separate variable (or set of variables) from a person's actual ability to comprehend '*the extent to which'* information is actually incomplete, and thereafter factor that piece of information into their willingness to engage in risk. Furthermore, an agent's ability to act rationally also takes into account that person's ability to *minimise the degree to which* information is incomplete. The social linguistic default is to fall back on terms such as shrewd, intelligent, astute etc. Therefore, when one employs vocabulary such as this, one is often inadvertently talking about 'a bundled variable' that embodies any possible combination of a person's social and cognitive ability, *and* their willingness to

undertake a risk based on how confident they are in their abilities in relation to the relative punishments (costs) and rewards.

The problem of analytical separation is not the aspiration of this thesis; we must however generate some practical ground upon which to stand, and coupling Paul Samuelsson's well renowned concepts of *stated* and *revealed preference*, with an *'ex-ante – ex-post'* distinction of rationality cements partially an avenue down which we may proceed. An imperfect but helpful illustration of this can be made via a thoughtful comparison of how differently the world passes judgement upon an entrepreneur/investor who risks his own capital, and alternatively how it judges a forecasting technocrat. This is an imperfect illustration because these are not necessarily mutually exclusive agent categories. Nonetheless, some may find this depiction helpful; an entrepreneur/investor is predominately judged by '*ex-post revealed rationality*' – the actual outcome of the performance. A technocrat on the other hand, while not being fully immune to judgement by ex-post revealed rationality, is relatively sheltered from it by way of a tendency for the world to judge him via '*ex-ante stated rationality.*' The following real world example illustrates this. While he considers himself a philosopher in the tradition of Karl Popper, theoretical academia does not look particularly seriously upon George Soros (at least not in a scientific publishing sense); the real world on the other hand looks upon his achievements, not least for their consistency, with outright awe. For Nobel laureates Merton and Scholes, the opposite is largely the case (see Ferguson 2008 and Lowenstein 2001). Technocratic failure is the quintessence of the 'statistically correct but outcome incorrect circumstance' – the 'rational but wrong' paradox. An entrepreneur/investor may also be rational but wrong, yet the sympathy of the paradox is not typically extended to them. In essence, part of what I am seeking to describe is the classical insight of Keynes, that even if markets [eventually] tend to rational outcomes, still, "*markets can remain irrational longer than you can remain*

solvent". Furthermore, on commenting upon why men as eminent and intelligent as the likes of Irving Fisher came so undone in 1929, Galbraith elegantly articulates a component of the point I am trying to make, "*Wisdom, itself is often an abstraction associated not with fact or reality but with the man who asserts it and the manner of its assertion……often in our culture, it is far, far better to be wrong in a respectable way than to be right for the wrong reasons*" (1975 pp.100-109). To bind that to the paradox that I am seeking to describe, we might add that 'luck' (i.e. randomness) is a 'wrong' or at least 'scientifically illegitimate' reason to be right.

Under the strictest definition of the term, is it even a paradox? Outside of pretentious abstractions it probably is not; it merely carries the conceited appearance of one (see Taleb 2004).

At first glance, one could argue that this simply boils down to an exposure of personal risk and the agents' related attitude to risk. The businessman gambles, the technocrat does not. Therefore, *personal* attitude to risk is not something that the technocrat need actively factor into his predictions – for the most part, his is more of a sportsman's bet. A somewhat light and partial dent in such reasoning is that one could argue that the technocrat does gamble; he gambles with the value of his reputation (i.e. risks the future market value of his labour – not that failure does not pay; indeed (at times quite handsomely) it does through its association with 'experience'. Taking that into account, it is perhaps not so much 'the explicit exposure to risk', but more the different degree to which each is personally insulated from the consequences of their failure. The technocrat has up his sleeve a number of legitimate 'get out of jail for free' cards – stochastic elements, black swans, exogenous shocks, and (the economist's Newtonian darling) *ceteris paribus*. The entrepreneur/investor may also have justifiable reasons for failure, yet the curse of being judged ex-post is that those reasons, however legitimate, will for the most part pass the eye of the beholder relatively unnoticed. Even

in the peculiar event of the entrepreneur's failure being formalised and communicated, it is still highly unlikely that the wider body of society would care to entertain them. Commercial society would generally encode them as *excuses* and *misfortune*, and the unforgiving temperament of 'main street' is such that 'excuses' are often heard but seldom listened to, as they generally play a distant second fiddle to material accomplishments. Therefore, while making allowances for definitional difficulties, the farmers in this model are businessmen, hence their abilities to act rationally shall be judged by the criterion of 'revealed ex-post' – the commercial actor's ability is what he achieves in reality, not what he would have liked to have achieved but did not have the zest, ability or information to do so.

Returning focus to the analytics of the story that is being told, one of the 'rationality variables' that this text has been endeavouring to describe has already been generated. The aim of the above discussion was to try to give an appropriate name to the action which generates Farmer A's Fault Based Unemployment (^{F}u). At a first glace, 'forecasting ability' seems to stand out as being an appropriate term. However, with all due respect to Milton Friedman's infamous pool player (1953), a term such as 'forecasting ability' is too clinical to accommodate reality (these are farmers not physicists). Also, Friedman's pool player pays adequate respect to neither randomness nor the attitude to risk that is embodied in the variable. In line with the above discussion, the term of choice is *'revealed foresight'*. ^{F}u informs about the 'revealed foresight' of Farmer A and captures her miscalculations and preference for risk in such a way that is clean of the influence of the unemployment we associate with the market reshuffle. Uncertainty is always present, yet as this is a deterministic module we cannot mop it up in the way a scholastic model *attempts*. We can however be candid in emphasising the existence of uncertainty, thereafter hypothesising that, as ^{F}u is 'a

revealed gamble', the degree of randomness is captured in agents' attitudes towards risk, and in turn be sufficiently pragmatic about any interpretations we seek to extract.

The further $^F u$ is from zero, the weaker the '*revealed foresight*' of the agent. In adherence to the previous description, revealed foresight is a form of 'ex-post rationality,' whereas 'stated foresight' is a form of 'ex-ante rationality'. As a point of academic interest, the ex-ante variable, albeit latent, is theoretically clean of the influence of a person's attitude towards risk. However, no extrapolation of this is going to take place here, because, for reasons that have been argued above, the concern of welfare ultimately boils down to that what is revealed, and that is what we are sticking with. The current picture appears as so:

$$(Q_A + Q_{FT} - Q_{Con} - {}^A Q_{FT}) = \overline{Q}_A - u_2$$

$$(\overline{Q}_A - u_2) + (Q_B - {}^B Q_{FT}) = E_{SD} - \hat{Q}_{Con}$$

This is the point at which $\hat{Q}_{Con}$ can be reintegrated into the model, as the next step is to see who gets to take it. There is of course a chance that it may not even exist; its existence depends entirely on Q_{Con} because that is the practical value to which it is equated $(Q_{Con} = \hat{Q}_{Con})$. So long as $\hat{Q}_{Con}$ exists, solving the problem of who gets it first depends on who wants it. Farmer A is only interested in acquiring it if u_2 exists in her quantity equation. If u_2 does not exist, Farmer B is free to take it, and the story is settled as so:

$$(Q_A + Q_{FT} - Q_{Con} - {}^A Q_{FT}) + (Q_B - {}^B Q_{FT} + \hat{Q}_{Con}) = E_{SD}$$

The above formulation materialises if the market readjustment has been relatively kind to Farmer A (low alpha), and if Farmer A has acted optimally with respect to placing an accurate gamble on alpha (no Fault Based Unemployment). These two events imply that she will then *not* care what happens to $\hat{Q}_{Con}$, and so Farmer B is left unopposed to take it all:

$$(Q_A + Q_{FT} - Q_{Con} - {}^A Q_{FT}) = {}^{*LC} Q_A$$

$$(Q_B - {}^B Q_{FT} + \hat{Q}_{Con}) = {}^{*LC} Q_B$$

The above might seem an overly simplistic ending, but it does nonetheless provide an intuitively friendly visualisation from which to progress the story and view less simplistic endings. Despite being permitted to swallow up all of $\hat{Q}_{Con}$ into his quantity equation, Farmer B is not better off, because by acting optimally Farmer A has tailored the value of $\hat{Q}_{Con}$ such that it is smaller than it would otherwise have been had she underestimated the value of alpha. Formally, under the assumption of no overestimation $(E(\alpha) \leq \alpha)$:

$$\frac{\partial \hat{Q}_{con}}{\partial E(\alpha)} < 0 \qquad \text{and} \qquad \frac{\partial \hat{Q}_{con}}{\partial {}^F u} < 0$$

We know already that Farmer B gets hurt as alpha decreases, but here it is very important to remind oneself that 'real alpha' is determined by the market, whereas $E(\alpha)$ is consciously selected by Farmer A. Therefore, as the choice of Q_{Con} approaches optimality for Farmer A, the overall quantity equation will be associated with a larger '*expected value*' of alpha – not necessarily a larger value of real alpha. However, unless

Farmer A is extremely risk averse and/or randomness reigns supreme (which it may), one would expect there to be some sort of causal link that flows from α to $E(\alpha)$.

Next it is necessary that we contend with the less benign, but more interesting, set-up that materialises when Farmer A is struck by a high value of alpha, and/or if the farmer exercises weak revealed foresight (underestimation of alpha). We know that the presence of u_2 indicates that either or both of those instances have occurred.

On realising that she is faced with some unemployment, Farmer A will try to wrestle back a proportion of $\hat{Q}_{Con}$, remembering of course that she can only attempt this in the presence of $^{*}Q_{Con} > 0$. The success of her attempt will tell us something about another interactive variable, namely her *relative commercial strength*. This can be formally dealt with in a manner similar to the previous partitioning of the $\hat{Q}_{FT}$ residual:

$$\hat{Q}_{Con} = \lambda\hat{Q}_{Con} + (1-\lambda)\hat{Q}_{Con} \ where \ \ 0 \leq \lambda \leq 1$$

Letting $\lambda\hat{Q}_{Con} = {}^{A}Q_{Con}$ *and* $(1-\lambda)\hat{Q}_{Con} = {}^{B}Q_{Con}$

Where $(Q_A + Q_{FT} - Q_{Con} - {}^{A}Q_{FT}) + {}^{A}Q_{Con} \leq \overline{Q}_A$

In plain English, $^{A}Q_{Con}$ is what Farmer A manages to snatch back, and she can only accept a value within her limited given capacity. $^{B}Q_{Con}$ is the adjusted component of the conventional order that Farmer B is able to capture (keep):

$$^{*LC}Q_A + {}^{*LC}Q = E_{SD}$$

$$(Q_A + Q_{FT} - Q_{Con} - {}^{A}Q_{FT} + u_3 + \lambda Q_{Con}) + (Q_B - {}^{B}Q_{FT} + (1-\lambda)Q_{Con}) = E_{SD}$$

$$(Q_A + Q_{FT} - Q_{Con} - {}^{A}Q_{FT} + u_3 + {}^{A}Q_{Con}) + (Q_B - {}^{B}Q_{FT} + {}^{B}Q_{Con}) = E_{SD}$$

Note the change away from transitional unemployment $u_2 \rightarrow u_3$ where u_3 represents final unemployment: $u_2 \pm \Delta u_2 = u_3$, because $\Delta u_2 = {}^A Q_{con}$.

The question is this; how does λ acquire its value? So far, Farmer B has been standing ideally by – at least 'ideally by' in the sense that Farmer A's $E(\alpha)$ and subsequent creation of $\hat{Q}_{Con}$, and alpha, are purely exogenous to him. The simultaneous emergence of $\hat{Q}_{Con}$ and u_2 changes this, permitting Farmer B to enter interactively into the game. With no hindering issues of capacity, Farmer B will of course want to keep all of $\hat{Q}_{Con}$, hence his optimal choice of multiplier for $\hat{Q}_{Con}$ is zero constant, ${}^B \overline{\lambda} = 0$. This would permit Farmer B to gain 100% of $\hat{Q}_{Con}$.

Farmer A on the other hand wants the proportion of $\hat{Q}_{Con}$ that deletes her unemployment. She cannot ask for more than u_2 as that would breach her capacity. Designed to collapse in the events of $u_2 = 0$ and/or $\hat{Q}_{Con} = 0$, Farmer A's multiplier appears as so:

$$\left. \left(\frac{u_2}{\hat{Q}_{Con}/100} \right) \middle/ 100 \right. = {}^A \lambda$$

If she is permitted to try to rescue some of the conventional order, her optimal snatch-back would be the proportion of Q_{Con} that is derived by ${}^A \lambda Q_{Con}$, as this is what would be required to place her in full employment. If ${}^A \lambda > 1$, this informs us that even acquiring 100% of $\hat{Q}_{Con}$ would be insufficient to delete all of her unemployment. Hence, we have to declare a practical multiplier $\forall {}^A \lambda > 1 \Rightarrow {}^{*A} \lambda = 1$, which simply dictates that the farmer cannot attempt to attain more than 100% of $\hat{Q}_{Con}$.

In seeking to declare relative commercial muscle, it's logical to take what Farmer A wants, compare it to what Farmer B wants, and base a judgement of 'market strength' on the deviation from the midpoint of that range. Unlike other aspects of this model, we are not now looking at a friendly array of values between 0 and 1. Rather, in seeking out the value of true λ we know that it must fall somewhere between 0 and $^{*A}\lambda$.

While Farmer A wants her demand for compensation to be equal to zero, what she wants *separately* from the *actual* compensation variable (λ), is that it equals her demand for compensation − which will *only* be zero if she has acted with perfect revealed foresight, and if the market reshuffle has not been too harsh on her. Farmer B does of course not want Farmer A's demand for compensation to be zero. On the contrary, he wants Farmer A's demand for $\hat{Q}_{Con}$ to be as high as possible, and thereafter for his counterpart to be unsuccessful in her attempt to summon up any compensation. To deal with this, and to measure who gets closest to what they want in the battle for $\hat{Q}_{Con}$, it is necessary to set up a neutral variable. Because Farmer B wants everything, this neutral variable can be shown to be equal to exactly half of what Farmer A wants:

$$\frac{^{B}\lambda}{2}+\frac{^{A}\lambda}{2}={}^{n}\lambda \text{, as } {}^{B}\overline{\lambda}=0 \quad \therefore \frac{^{*A}\lambda}{2}={}^{n}\lambda \qquad (\,{}^{n}\lambda = \text{neutral lambda})$$

If $\lambda={}^{n}\lambda$, the tug-of-war is a stalemate; other things being equal, the players demonstrate identical pulls such that each ends up with a ${}^{n}\lambda\hat{Q}_{Con}$ proportion of $\hat{Q}_{Con}$. Therefore, in order to gauge the relative commercial strengths of our two players, we need to know how distant from, and in what direction, 'true lambda' deviates from neutral lambda:

$$\lambda={}^{n}\lambda+\psi \qquad \left\{{}^{Max}\lambda={}^{A}\lambda, {}^{Min}\lambda={}^{B}\lambda=0\right\}$$

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The sign and size of ψ captures precisely this. A negative value of ψ indicates relative success for Farmer B, while a positive value shows that the balance is tipped in favour of what Farmer A wants. $\left\{ {}^{Max}\lambda = {}^{A}\lambda, {}^{Min}\lambda = 0 \right\}$ specifies the range of values that ψ can as a discrete variable legitimately take:

$$\psi = \lambda - {}^{n}\lambda$$

$${}^{Max}\lambda = {}^{*A}\lambda \Rightarrow {}^{Max}\psi = {}^{*A}\lambda - {}^{n}\lambda$$

$${}^{Min}\lambda = {}^{B}\lambda = 0 \Rightarrow {}^{Min}\psi = -{}^{n}\lambda \qquad\qquad \left\{ {}^{Max}\psi = {}^{A}\lambda - {}^{n}\lambda, {}^{Min}\psi = -{}^{n}\lambda \right\}$$

As is always the case with qualitative information that is condensed to a number, the 'real world' description of ψ is open to some debate. While the argument is not as stark as that what might take place over the qualitative description of how fault based unemployment $({}^{F}u)$ is generated, for the purists amongst us, descriptions might be considered to be delicate. For instance, because an explicit bet does not have to be placed in order to reveal ψ, attitude towards risk appears far less serious an ingredient than it might perceivably be in ${}^{F}u$. But, the generation of ψ still comes via a commercial act, and so it would seem tenuous to state blankly that attitude to risk is entirely absent from the fold. As for the 'ability to act rationality' and 'related foresight', these must play some role. However, given that ψ represents the outcome of commercial battle, and ${}^{F}u$ is the derived product of personal revealed ability to forecast and gamble, perhaps this just reinforces the sensibility of reasoning that rationality is not a 'one size fits all' shoe. Is it not telling that one could make a near identical statement as regards human intelligence – is it the ability to memorise, is it the ability to create, is it the ability to adapt, is it the ability to predict etc?

The form of rationality that is embedded in ^{F}u is more the pre-calculated sort, the type that traditional economics is most accustomed to thinking about, whereas ψ probably captures more of what might be described as being *socially adaptive rationality* remember it's the outcome of a human based commercial battle. Truly, in some shape or form, we are, with ^{F}u and (perhaps more so with) ψ, peering into a realm of animal spirits that are not yet fully understood – nor for that matter may they ever be. With more humble aims, we are simply trying to generate variables that partially capture 'a representation' of various animal spirits and abilities, and thereafter examining for changes in welfare with respect to them.

On the back of that understanding, the intuitive argument of this discourse is that the predominance of ψ's value is representative of '*relative commercial prowess between agents*'. ψ is taken as an indicator of business acumen; simply, the closer it is to $^{Min}\psi$, the better a businessperson is Farmer A relative to Farmer B. Note that corrupt dealings within the system are not precluded, as the cloaking and cloaked presence of corruption with respect to market interactions may very well be an authentic part of what makes a businessperson thrive – the legitimacy of illegitimacy, if you will. Equally, being relative rather than absolute, a low value of ψ could imply weak commercial skills on the part of Farmer B. While conventional reasoning might suggest that the opposite situation is largely maintained, outside of such reasoning one may consider that looking at it the other way around (closeness to $^{B}\overline{\lambda} = 0$), possibly leaves the door ajar to a few of the more temperamental elements of human behaviour. One aspect in particular worth mentioning might aptly be labelled 'market stubbornness' on the part of the buyer. This can be described as, other things being equal, the previously rejected buyer might exhibit a degree of favouritism to Farmer B over Farmer A because the latter has already disrupted him by previously turning away orders; or perhaps even as a point of hostility to fair-trade itself. Nonetheless, while market stubbornness (agent revenge)

may carry with it a personal utility value, one would speculate that the price a commercial trader is willing to pay for it is not particularly high – a smile upon one's face does not put food upon one's plate; it's generally the other way around. Hence we largely reasons that ψ is a sound enough indicator for 'relative business prowess' alone.

Piecing together what has so far been woven, unlike the full spare capacity scenario where $(Q_A + Q_{FT} -{}^AQ_{FT})={}^*Q_A$ and $(Q_B -{}^BQ_{FT})={}^*Q_B$ became our post fair-trade quantities, the condition of limited spare capacity has given rise to a slightly different arrangement, expressed as ${}^{*LC}Q_A$ and ${}^{*LC}Q_B$. Thus:

$${}^{*LC}Q_A = (Q_A + Q_{FT} - Q_{Con} -{}^AQ_{FT} +{}^AQ_{Con} + u_3)$$

$${}^{*LC}Q_B = (Q_B -{}^BQ_{FT} +{}^BQ_{Con})$$

$${}^{*LC}Q_A +{}^{*LC}Q_B = E_{SD}$$

As the quantity derivatives contain no surprises or properties more insightful than those of the unlimited capacity scenario, we may simply transplant these new quantities into their respective post fair-trade income identities.

Farmer A's new income appears as so:

$${}^{*LC}Y_A = Y_A + \Delta Y_A$$

$$Y_A + \Delta Y_A = (P_M)({}^{*LC}Q_A - Q_{FT}) + (P_{FT})(Q_{FT}) + 0(u_3)$$

$${}^{*LC}Y_A = (P_M)({}^{*LC}Q_A - Q_{FT}) + (P_{FT})(Q_{FT})$$

$$({}^{*LC}Q_A - Q_{FT}) = (Q_A - Q_{Com} -{}^AQ_{FT} +{}^AQ_{Con})$$

$${}^{*LC}Y_A = (P_M)(Q_A - Q_{Con} -{}^AQ_{FT} +{}^AQ_{Con}) + (P_{FT})(Q_{FT})$$

$${}^{*LC}Y_A = P_M Q_A - P_M Q_{Con} - P_M{}^AQ_{FT} + P_M{}^AQ_{Con} + P_{FT}Q_{FT}$$

Farmer B's new income appears as so:

$$^{*LC}Y_B = Y_B + \Delta Y_B$$

$$Y_B + \Delta Y_B = (P_M)(Q_B - {}^BQ_{FT} + {}^BQ_{Con})$$

$$^{*LC}Y_B = (P_M)(Q_B - {}^BQ_{FT} + {}^BQ_{Con})$$

$$^{*LC}Y_B = P_M Q_B - P_M {}^BQ_{FT} + P_M {}^BQ_{Con}$$

Putting these two together provides us with the new post fair-trade income for the whole local economy:

$$(P_M Q_A - P_M {}^*Q_{Con} - P_M {}^AQ_{FT} + P_M {}^AQ_{Con} + P_{FT}Q_{FT}) + (P_M Q_B - P_M {}^BQ_{FT} + P_M {}^BQ_{Con}) = {}^{*LC}Y$$

Appendices 3.3 to 3.6 respectively detail the full expansions of the quantity and income equations of each farmer. Using what we now have, we may generate, and select for comparison, a number of welfare movements, looking firstly at incomes with respect to the quantity of fair-trade:

$$^{*LC}Y_A = P_M Q_A - P_M Q_{Con} - P_M \alpha Q_{FT} + P_M {}^AQ_{Con} + P_{FT}Q_{FT}$$

$$\frac{\partial^{*LC}Y_A}{\partial Q_{FT}} = P_{FT} - \alpha P_M, \quad \text{as } P_{FT} > P_M, \text{ and } 0 \le \alpha \le 1 \quad \frac{\partial^{*LC}Y_A}{\partial Q_{FT}} > 0$$

$$^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - P_M \lambda Q_{Con}$$

$$\frac{\partial^{*LC}Y_B}{\partial Q_{FT}} = -P_M + \alpha P_M \quad \therefore \quad \alpha = 1 \Rightarrow \frac{\partial^* Y_B}{\partial Q_{FT}} = 0, \ \forall \ \alpha \ne 1 \Rightarrow \alpha < 1 \Rightarrow \frac{\partial^* Y_B}{\partial Q_{FT}} < 0,$$

$$\frac{\partial^{*LC}Y}{\partial Q_{FT}} = P_{FT} - \alpha P_M - P_M + \alpha P_M = P_{FT} - P_M \quad \therefore P_{FT} > P_M \Rightarrow \quad \frac{\partial^{*LC}Y}{\partial Q_{FT}} > 0$$

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$$\frac{\partial^{*LC}Y_A}{\partial\alpha} = -P_M Q_{Con} \qquad\qquad \frac{\partial^{*LC}Y_B}{\partial\alpha} = P_M Q_{Con} \qquad\qquad \frac{\partial^{*LC}Y}{\partial\alpha} = 0$$

This underlines the non-zero-sum trade-off that was observed in the limited spare capacity scenario. Again, as with unlimited capacity, the Kaldor-Hicks criterion is met, and the aggregate of the local economy will grow, yet changes in the quantity of fair-trade will not necessarily result in a Pareto improvement. We again observe the cardinal role of alpha in relation to Pareto improvements. As was the case in the unlimited capacity scenario, as alpha increases, Farmer B becomes increasingly sheltered from a negative effect. Again the exchange is zero-sum, the aggregate is constant. However, the possibility of the fair-trade farmer acting with weak revealed foresight dictates that $\alpha = 0$ is no longer a necessary and sufficient condition for the generation of a Pareto improvement. This does of course constitute one of the key differences between limited and unlimited capacity scenarios, as by way of a commercial battle, the latter scenario opens a zero-sum transfer window by which Pareto receives a second chance:

$$^{*LC}Y_A = P_M Q_A - P_M Q_{Con} - P_M \alpha Q_{FT} + P_M \lambda Q_{Con} + P_{FT} Q_{FT}$$

$$^{*LC}Y_A = P_M Q_A - P_M Q_{Con} - P_M \alpha Q_{FT} + P_M Q_{con}({}^n\lambda + \psi) + P_{FT} Q_{FT}$$

$$^{*LC}Y_A = P_M Q_A - P_M Q_{Con} - P_M \alpha Q_{FT} + P_M Q_{con}{}^n\lambda + P_M Q_{con}\psi + P_{FT} Q_{FT}$$

$$^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - P_M \lambda Q_{Con}$$

$$^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - P_M Q_{con}({}^n\lambda + \psi)$$

$$^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - P_M Q_{con}{}^n\lambda - P_M Q_{con}\psi$$

$$\frac{\partial^{*LC}Y_A}{\partial\psi} = P_M Q_{Con} \qquad\qquad \frac{\partial^{*LC}Y_B}{\partial\psi} = -P_M Q_{Con} \qquad\qquad \frac{\partial^{*LC}Y}{\partial\psi} = 0$$

Cross-referencing these values against changes with respect to the quantity that Farmer A chooses to reject moves us towards a more complete picture which illustrates the possibility of lambda restoring fair-trade as a Pareto improvement:

$$^{*LC}Y_A = P_M Q_A - P_M Q_{Con} - P_M \alpha Q_{FT} + P_M \lambda Q_{Con} + P_{FT} Q_{FT}$$

$$^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - P_M \lambda Q_{Con}$$

$$\frac{\partial^{*LC}Y_A}{\partial Q_{Con}} = -P_M + P_M \lambda \qquad \frac{\partial^{*LC}Y_B}{\partial Q_{Con}} = P_M - P_M \lambda \qquad \frac{\partial^{*LC}Y}{\partial Q_{Con}} = 0$$

It can therefore be seen that the relationship between Farmer A's rejected adjustment quantity and the incomes of both farmers hinges on the result of a tug-of-war over what Farmer A mistakenly rejects. Hence, poor foresight will harm Farmer A only if she is a relatively weak commercial actor (sufficiently low ψ) because if $^{*A}\lambda = \lambda$, Farmer A will then have compensated herself and won back everything that she mistakenly gave away. Furthermore, if she wins that battle at a value of $\alpha = 1$, fair-trade will be Pareto improving. If she does not win that battle, $\alpha = 1$ implies that fair-trade will not then result in a Pareto improvement. The other side of the coin is that, for values of $\alpha < 1$, fair-trade can still be Pareto improving, so long as Farmer A has not acted with perfect revealed foresight (i.e. the farmer mistakenly rejected something he should not have rejected) and Farmer B is able to exercise superior commercial prowess.

3.5 A NUMERIC EXAMPLE OF FAIR-TRADE HURTING ITS FARMER

As one may have already deduced, the most perverse result to come out of this model is that there exists the possibility for fair-trade to negatively affect the participating

producer while simultaneously increasing the income of non-participating producers. Given that this is our most stark finding, it is perhaps worthwhile to illustrate it with a numeric example of this extremity. All it takes for this adverse response to materialise is for the fair-trade farmer to feel her capacity constraint, the market to then offer a harsh reshuffle (high alpha), the fair-trade farmer to exercise poor foresight, and finally for the farmer to possess very weak commercial strength. Formally, $\alpha = 1 \; \lambda = 0$.

$\overline{Q}_A = 100$ The farmer has the capacity to produce 100

$Q_A = 90$ He is operating 10% below capacity, hence $\overline{Q}_A - Q_A = u_1 = 10$; original unemployment (spare capacity) $\overline{Q}_A - Q_A = u_1$

$P_M = 10$ At a market price of 10, the pre fair-trade revenue of Farmer A stands at $^{LC}Y_A = 900$; to ensure an equal starting point let us grant Farmer B the same revenue.

$P_{FT} = 12$ The fair-trade price is set at 2 above the market price.

$Q_{FT} = 20$ A fair-trade order is placed, which exceeds the farmers capacity by 10%

$\alpha = 0.9$ The market produces a painful reshuffle,

$\alpha = 0.9 \Rightarrow ^A Q_{FT} = 18$ The value of the market reshuffle implies that Farmer A will experience a drop of 18 units when the market adjusts.

$E(\alpha) = 0.1 \Rightarrow E(^A Q_{FT}) = 2$ implies that through risk averseness and/or poor revealed foresight the farmer is only prepared for a reshuffle of 2.

$^{*op}u_2 = Q_A + Q_{FT} - ^{*Op}Q_{con} - ^A Q_{FT} - \overline{Q}_A = 8$ dictates that 8 units of unemployment are generated solely via the market reshuffle. The weakness of her foresight is such that she is going to drop 16 units, when she should actually drop none;

$^A Q_{FT} - E(^A Q_{FT}) = ^F u = 16$. 16 further units of unemployment have come about as a result of the farmer's personal risk averseness and/or poor revealed foresight.

Therefore, $^{*op}u + ^F u = u_2 = 24$ i.e. total transitional unemployment stands at 24, which is a net increase of 14 from the original level.

$^{op}Q_{Con} = Q_A + Q_{FT} - {}^A Q_{FT} - \overline{Q}_A = -8$ displays that the theoretically optimal quantity to reject is -8, the fact that it is negative implies that, even if Farmer A acts optimally, she will still be left with 8 units of unemployment. Therefore, in advance we know $^{*op}u_2 = 8$, a number which is obtainable in negative form from $^{*op}u_2 = Q_A + Q_{FT} - {}^{*Op}Q_{con} - {}^A Q_{FT} - \overline{Q}_A$. From this we deduce that the 'optimal practical' value for Farmer A to reject is zero ($^{*Op}Q_{con} = 0$) because $^{op}Q_{Con}$ is negative.

From having pieced together the various levels of foresight and related unemployment, we know that the farmer foolishly rejected 16 conventional units, $Q_{con} = \hat{Q}_{con} = Q_A + Q_{FT} - {}^A Q_{FT} - \overline{Q}_A + ({}^{*op}u_2 + {}^F u) = 16$, when she should have rejected none. These 16 units are now floating. Because her unemployment (spare capacity) stands at 24, Farmer A wants more than what is available, $\dfrac{\left(\dfrac{u_2}{\hat{Q}_{Con}/100}\right)}{100} = {}^A\lambda = 1.5$.

Hence, in practical terms, her demand multiplier becomes 1 because $^A\lambda > 1 \Rightarrow {}^{*A}\lambda = 1$. As a composite player, Farmer B has a fixed multiplier in which he wants to take all of what is floating, hence, the neutral variable $^n\lambda$, is 0.5, or half of what Farmer A wants and therefore $\lambda = 0.5 + \psi$. Keeping to the appropriate available ranges $\{^{Max}\lambda = {}^A\lambda, {}^{Min}\lambda = {}^B\lambda = 0\}$ and $\{^{Max}\psi = {}^A\lambda - {}^n\lambda, {}^{Min}\psi = -{}^n\lambda\}$, let us set Farmer A as being an extremely weak commercial actor; ψ takes its minimum value of -0.5, and λ automatically assumes its minimum value of zero.

Putting these numbers together provides the sought-after illustration, for example:

Farmer A's income has moved from $P_M Q_A = 900$ to

$$^{*LC}Y_A = P_M Q_A - P_M Q_{Con} - P_M {}^A Q_{FT} + P_M {}^A Q_{Con} + P_{FT} Q_{FT} = 800$$

Farmers B's income has moved from $P_M Q_B = 900$ to

$$^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - P_M \lambda Q_{Con} = 1040$$

The non-participating agent has gained at the expense of the fair-trade agent. The gains of the gainer are greater than the losses of the loser (Kaldor passed), but the loser cannot profitably bribe the winner to oppose the change (Hicks failed). Holding the 'rational indicators' at the same level, the only way to prevent a negative income impact with the same numbers would be for the fair-trade price to be considerably greater than the market price. Yet, as the reader may have noted, the margin of generosity was substantial in that, the fair-trade premium of this example was 20% above the market price. This numerical example has hopefully fulfilled the purpose of bringing the equations to life.

3.6 RELAXING THE ASSUMPTION OF NO OVERESTIMATION IN THE MODEL

For the sake of trying to smooth the edges of this story, let us now relax the assumption of 'no overestimation' on the part of Farmer A and examine what welfare arrangements this might give rise to. Recall the equation which depicts the amount that Farmer A discards in order to participate in fair-trade: $Q_{Con} = Q_A + Q_{FT} - E(^A Q_{FT}) - \overline{Q}_A$.

Optimality of this identity was previously defined to be when $E(^A Q_{FT}) = {}^A Q_{FT}$ which, as Q_{FT} is known, implies $E(\alpha) = \alpha$.

Therefore the optimal rejection appears as $^{op}Q_{Con} = Q_A + Q_{FT} - \alpha Q_{FT} - \overline{Q}_A$.

What 'overestimation' generates is $E(^A Q_{FT}) > {}^A Q_{FT} \Rightarrow E(\alpha) > \alpha$.

Employing a northwest superscript 'OE' to indicate that we are now in the realm of overestimation, and letting Θ represent the amount by which the farmer overshot, formally:

$$^{OE}E(\alpha) = \alpha + \Theta,$$

$$^{OE}Q_{Con} = Q_A + Q_{FT} - (^A Q_{FT} + \Theta) - \overline{Q}_A$$

$$^{OE}Q_{Con} = Q_A + Q_{FT} - ^A Q_{FT} - \Theta - \overline{Q}_A$$

$$\therefore {}^{OE}Q_{Con} < {}^{OP}Q_{Con}$$

This gives rise to $^{*LC}Q_A = \overline{Q}_A + \Theta$ which is an untenable condition. The instability means that Farmer A must subsequently again eject a certain quantity. Ideally she would like to eject exactly Θ quantity, however scorned buyers *might* punish her. Let Ω be the exogenous punishment coefficient $(\Omega \geq 1)$ whereby trading partners potentially penalise Farmer A for trying to accept an order of more than she can accommodate. If it assumes a value of one, then the buyer (market) opts not penalise her, or else a punishment coefficient such as Ω simply does not exist. So:

$$^{*LC}Q_A - \Omega\Theta = \overline{Q}_A + \Theta - \Omega\Theta$$

Transplanting this into Farmer A's income equation yields the following outcomes:

$$^{*LC}Y_A = (P_M)(Q_A - Q_{Con} - ^A Q_{FT} + ^A Q_{Con} - \Omega\Theta) + (P_{FT})(Q_{FT})$$

$$^{*LC}Y_A = P_M Q_A - P_M Q_{Con} - P_M {}^A Q_{FT} + P_M {}^A Q_{Con} - P_M \Omega\Theta + P_{FT} Q_{FT}$$

$$\frac{\partial^{*LC}Y_A}{\partial \Theta} = -P_M\Omega \qquad\qquad \frac{\partial^{*LC}Y_A}{\partial \Omega} = -P_M\Theta$$

Mirroring this with the addition to Farmer B (i.e. performing the move that is necessary to maintain the original quantity equilibrium), should give rise to a transfer in which Farmer B will be the zero-sum beneficiary of the market's decision to punish farmer A:

$$^{*LC}Y_B = (P_M)(Q_B - {}^BQ_{FT} + {}^BQ_{Con} + \Omega\Theta)$$

$$^{*LC}Y_B = (P_M Q_B - P_M{}^BQ_{FT} + P_M{}^BQ_{Con} + P_M\Omega\Theta)$$

$$\frac{\partial^{*LC}Y_B}{\partial \Theta} = P_M\Omega \qquad\qquad \frac{\partial^{*LC}Y_A}{\partial \Omega} = P_M\Theta$$

This is what one would expect i.e. if the market decides to punish Farmer A for rejecting too small a conventional quantity, Farmer B benefits to the tune of a straightforward transfer. It should be noted that it is not being asserted that a punishment entity such as Ω definitely exists, just that it might. Interestingly, if it does not exist, then the rational farmer should always overestimate by rejecting too small a Q_{Con} quantity. One possibility might be that the punishment variable materialises above a certain threshold, as buyers will tolerate a small degree of overestimation before they choose to penalise their suppliers. The reader should of course use their own intuition and/or empirical knowledge regarding the existence of any such variable. The relevance of its existence is that we have identified another avenue by which fair-trade can potentially hurt a participating farmer. Equally, and perhaps more realistically in terms of *net* welfare movements, we have identified another channel of compensation by which a positive or negative externality can be diluted.

In drawing this tale of two farmers to a close, it's worth remembering that one of the key aims of this model was to try to facilitate a better overview for the policymaker. In assistance of that objective, Appendix 3.6 offers a tabled summary describing each variable and the welfare effect associated with it, and comments briefly upon the scope for intervention. It must be mentioned that, intuitively, the scope for intervention appears rather limited, or at least in need of some strong imagination.

3.7 CONCLUDING REMARKS

We are presented with a somewhat mixed picture to try to summarise. Under the condition of constant supply and demand, the results cannot be described as being wholly unfavourable to fair-trade, nor can they be described as unreservedly positive.

Under the conditions of this model, in all scenarios fair-trade uplifts the local producer economy at the aggregate level. Yet a number of surprises have been unearthed as regards the externalities faced by non-participants. While fair-trade may well increase the welfare of those who are selected to participate, the concept potentially presides over a number of zero-sum transfers. In some instances it will culminate in changes that satisfy the Kaldor-Hicks criterion. While a Pareto Improvement might be difficult to navigate, fair-trade does exhibit the possibility of generating one. An interesting offshoot is that, under certain conditions, fair-trade may theoretically destroy the entire income of non-participants. This is an extreme outcome, the occurrence of which is not being predicted as likely; it is merely stated that it can hypothetically occur.

It is the scenario of limited spare capacity that grants us our cardinal strike against conventional wisdom. When this scenario is conjoined with a farmer being a weak predictor of market adjustments and thereafter exhibiting poor business acumen, it can be shown that accepting a fair-trade order may actually reduce the welfare of the fair-

trade participant. The level of damage fluctuates depending on the various combinations of these two stated weaknesses, but may receive some mitigation if the fair-trade mark-up is substantially greater than the market price. However, even if the fair-trade farmer suffers this blow, there is no loss to the local aggregate economy; one for one, the gains simply end up in the pockets of other local producers. Again, the claim is not that this will take place, just that it theoretically can. This should cause organisers to pause for thought, but, perverse as it possibly sounds, it should not necessarily diminish the enthusiasm of those consumers who monetarily support the concept of fair-trade; they will still be assisting a group of producers who are quite feasibly just as disadvantaged as those they thought they were helping.

It is worth noting that without knowing who is better off to begin with, we cannot say outright whether fair-trade increases or decreases income inequality between producers. Interestingly, even if we were to know who was better off to begin with, the adverse corners of this model serve to inform us that such information is necessary, but not sufficient, to make a declaration about what fair-trade bodes for local income inequality. It has the ability to *either* smooth or aggravate it, in favour of *either* the participant or the excluded producer.

A number of interesting variables have surfaced in this model. Quantitatively, they are what they are, but qualitatively, interpretations of them have been presented. Obviously I stand by my own interpretations or else I would not have made them. Still, if the reader chose to impose different interpretations of α and ψ, I do not believe that would lead to the central objective of this paper being lost. In particular, even if one where to apply randomness to them, the central contribution of having identified the quantitative placement of these variables would not suffer a loss of relevance, as an inspection of welfare changes with respect to them would be no less worthy an endeavour.

By uncloaking a number of theoretical tradeoffs, it is hoped that this model will permit the policymaker to have a clearer vantage point in respect of the welfare tradeoffs in which they may be dabbling. My intuition however is that many of the relevant variables appear to be beyond the direct control of one who would seek to intervene.

Chapter IV

Empirical evidence from South Africa

4.1 INTRODUCTION AND BACKGROUND: FAIRHILLS PROJECT

This chapter represents an attempt to piece together systematic evidence relating to the impacts of fair-trade on landless labourers.

The Fairhills project stands as one of the largest FLO-accredited endeavours. The project is based in and around a picturesque collection of Western Cape wine lands situated approximately 80 to 100 km northeast of Cape Town in South Africa's Breedekloof region. The venture is a collaboration between Origin Wine Ltd and Du Toitskloof Wine Cellar. At the time of data gathering, the scheme covered 14 of the 22 grape producing farms that sell to Du Toitskloof. From its participating producers, Du Toitskloof divides fair-trade with proportional equality by which 35% of each farm's contribution becomes fair-trade certified wine. Taken together, this amounts to over 900 hectares under vines, from which 10 million litres of FLO-qualified wine is extracted, across which the livelihoods of over 800 people (250 families) are potentially touched for the better. Initial FLO certification only took place in 2005, hence when it comes to evaluating developmental impact, one must take care to harbour 'appropriately realistic' expectations.

In its initial year (2005) the project gave rise to three day care facilities that were together run by 24 full time employees who were themselves subject to a number of capacity building programmes. Included in this was the assurance that a general practitioner would be on hand to provide support for day care operations, plus the purchase of a project bus to help facilitate community endeavours such as sports days. To this it might be added that one of the main points of mild envy to surface from non

fair-trade workers was their disappointment at not being able to participate in such activities.

The consecutive year of the project (2006) bore witness to the construction of community centres, and the implementation of an adult literacy program and farm management course. In addition, a small craft co-operative was established, a housing renovation programme gathered pace, and extra-curricular activities such as sports, women's and youth clubs, were more formally integrated.

In its third year (2007), the project appeared to divert energies towards the activities of 'capacity building' that had taken root in the previous year. This included the birth of a humble library, a computer literacy initiative, the introduction of a bursary (scholarship) programme and training in matters of personal finance. Also, there was the appointment of a psychologist to help with perennial blights such as alcoholism and domestic violence. Word of mouth indicated that substance abuse had indeed much declined over the duration of the project. This we must take as anecdotal, to try to corroborate it with hard data is not a feature of this paper.

At the time of our inspection, the project had set itself a number of further goals, including purchasing its own land, constructing a medical clinic, expanding the bursary program, and acquiring additional motor vehicles for transport.

The generalised standards that govern the project are those that relate to FLO's "Generic Fairtrade Standards for Hired Labour[15]". Naturally, efforts are of course made to adhere to the broader FINE definition (see general introduction p.13), and by its own admission, FLO's standards draw heavily from the internationally recognised standards and conventions of the ILO (see in particular ILO Convention 110). In rare instances where national legislation sets higher standards than those of FLO, those rules default to

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[15]http://www.fairtrade.net/fileadmin/user_upload/content/Generic_Fairtrade_Standard_HL_Dec_2007_EN.pdf

be the fair-trade standards. The plus is that, through certification inspections, the fair-trade system possibly plugs a gap in enforcement that the state can probably not feasibly fill.

In terms of ownership, the workers 'as a communal body' own 25% of the label-brand that they are involved in, though let it be stressed that this is not 25% of the land. Each bottle of fair-trade wine receives a premium of 0.7 South African rand, all of which is to be somehow invested into the community.

Now, the primary concern of this discourse is 'outcome' as opposed to definitional process or actual enforcement, and that permits us to avoid a protracted discussion of legal matters – an area in which others are more qualified. For the kind of analysis we are undertaking, one of the first questions which springs to mind should be, "is the data randomised?" Regrettably, it would be somewhat fraudulent to claim pure randomisation of this data, however we can legitimately claim that it is not too distant from being random. It is random in that we imposed no selection criteria and refused no appropriate participant, that is to say, our selection procedure was itself essentially random. The impurity that lingers is that, by default, every poll and survey suffers from the implication that the sample consists exclusively of those 'who consent' to be surveyed. Particularly true in respect of non fair-trade workers, procuring access did at times bear many of the hallmarks of diplomatic adventure, and while no farm workers declined to participate, some farmers did turn down our requests for access to their workers. There are other practical constraints on randomness, for example the time of year that a survey like this can take place precludes all but the least busy times of the harvest cycle. Hence we may miss a number of migrant labourers – the winter birds had mostly flown away.

In respect of both randomness and premeditated plans, the field can be an unforgiving place; unexpected trade-offs arise to be managed, and resources almost

always prove to be more acutely finite than one originally anticipated. It is true that the data from which this chapter is derived is a little coarser than much of what typically enters an economist's kitchen. However it may be an underlying strength of this project that we did not have delivered to us an agreeably polished spreadsheet of data – hindsight not foresight. With cold damp tool sheds for offices, tree stumps and sacks of onions for chairs, we shared firsthand the fatigue of our interpreters. Our stomachs rumbled in harmony with theirs when faced with the understanding we daren't stop for fear that the elements deny us the morrow's work. Without hyperbole, it is *our* fingernails beneath which the day's data and dirt gathered, and we believe that cements candidness where there *might* otherwise be divorced indifference or plausible deniability.

When it comes to ironing out those very human creases in data, respite is of course sought in the asymptotic virtue of a 'big n'. The symmetry of our dataset appears to serve us well in that regard. Nevertheless, data of this nature does of course inadvertently carry the scent of something other than pure science. With something resembling an acquittal, one may wish to bear in mind that one is kidding oneself if one tacitly assumes that base level human development data, even that from the likes of the World Bank or UNDP, is somehow immune from vagaries of the field. Accordingly, and with respect for the alternative methodologies of others, let the underlying confession of this chapter be that my claim is too add richly to 'the impact debate' of fair-trade, I do not claim to settle it beyond all doubt.

4.2 INTRODUCTION TO THE DATA AND DESCRIPTIVE STATISTICS

The observations of this paper took place in the South African winter of 2007. The questionnaire[16] is available to view in Appendix 4.45. Despite the fact that we only captured two to three years of official fair-trade certification, as the pre-certification process is a stringent dress rehearsal that itself takes a number of years, the treatment effect is hypothesised to encompass the last three to five years.

The total sample size is 381. The fair-trade group contains 273 workers, and the control group is comprised of 108 non-fairtrade workers. In this section we will offer a comparative breakdown of the descriptive statistics from the survey, the details of which are partitioned by the following 3 subheadings:

i.   Material welfare: Income, expenditure, and ownership of goods

ii.   Immaterial welfare: Health, Education, and Family.

iii.   Participation, and interaction with FT

The design of this chapter is such that the selective reader should experience little difficulty in navigating to whichever variable may interest them in particular. Indeed, the sequence of the chapter's appendices should be of particular value in facilitating the aims of a reader who wishes to jump to particular points of interest.

As 'production decisions' are taken by the farmer rather than the workers, the potential for inspecting for adverse affects has more limited scope than may otherwise be the case. Most notably, the categories of people covered by this data preclude the opportunity to conduct any meaningful investigation into oversupply. Nonetheless, there do exist other more subtle avenues by which adverse affects may make themselves felt, and where a clean path presents itself, an explicit hypothesis shall be stated.

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[16] The questionnaire is largely a collaboration between Brigitte Granville and Steven Telford, other members of the QMUL fair-trade team did add some questions related to their own fields that is legal - Janet Dine, ethical - Andrew Fagan, and technological - Rohan Kariyawasam.

Reviewing descriptive statistics and simple pair-wise relationships is valuable in its own right, however the wider initiative is to employ the insights on offer to piece together something more sophisticated. One of the most challenging aspects of sewing a model together is in deciding, or rather having the variables decide for you, which is a dependent and which is an independent variable – reverse causality (endogeneity). There is no silver bullet for this, yet it will become evident that our picture is afforded an actuality in which some of the variables which typically stand out as being naturally prone to endogeniety are in fact not – at least not in the way we will deploy and interpret them. This will be particularly evident in relation to health and education variables. We will discuss these issues in more micro detail as they arise.

Prior to jumping into a reservoir of numbers and statistical tests, it is necessary to say something about the initial points of balance and imbalance that the data harbour. In terms of the core purpose of this paper, we deal with two primary groups; fair-trade and non fair-trade. Hence it is appropriate to first offer some introductory information on how balanced these two groups are in respect of their most rudimentary divisions of difference.

In relation to gender, the non fair-trade workers are finely balanced, almost a perfect 50:50 split. A similar compliment cannot be extended to the fair-trade group, where the ratio is skewed at 70:30 in favour of males. Tests for a relationship of association between gender and fair-trade confesses that our sample is under-representative of fair-trade females. With age means and medians all converging on 37, both within and between groups, the age distribution portrays exemplary symmetry. The average and median number of people per household hovers just below 5 for the non fair-trade workers, whereas it strays just above 4 for the fair-trade group. Both groups display an identical proportion of marriage and co-habitation (45%), which is encouraging because, despite being a plain enough variable, the acquisition of a partner is often

thought to hold within its walls a good deal of unobservable ability. As a further point of good balance, approximately the same minority of people in each group are ineligible to vote, roughly 6%. As one would expect, the lion's share of interest takes place in national elections. While a slightly higher proportion of fair-trade workers display a propensity to vote, a chi-squared test on 'any democratic participation' strongly suggests independence between groups. Backed up by correlation coefficients, we cannot conclude that fair-trade workers are any more or less interested in democratic participation. The balance of the dataset receives a further endorsement by the fact that general voter turnout within the sample is broadly in line with the national average.

One of the trickiest issues we must steer around is the potential red herring created by having both seasonal and permanent workers. Unless otherwise stated, whenever we refer to 'class of worker' it should be understood that we are referring to whether or not a person is a temporary/seasonal or permanent worker. 11% (29 absolute) of the fair-trade group classify themselves as seasonal workers, whereas that proportion rises to 28% (30 absolute) for non fair-trade workers. The problem created by permanent and seasonal workers is quite multidimensional, and typifies the 'control problem' as to why descriptive statistics can potentially mislead. It is most helpful that tests of independence reject a link between fair-trade and class of worker. However, the headache that emerges, albeit a very typical one, is that seasonal labour is disproportionately female. In all, 35% of the female population is seasonal labour, while the figure for males is closer to 6%. Unsurprisingly, appropriate tests indicate a lack of independence between the categories of gender and class of worker. Coupling this with the previously hinted lack of independence between fair-trade and gender permits us a clear line of sight as to where we should direct our suspicions in respect of descriptive statistics. A number of scenarios were considered in which the 29 fair-trade seasonal workers were to be viewed separately, given quasi fair-trade status, or repatriated into

the non fair-trade group. However, based on the evidence that came to light in the participation section 4.2.3 of this chapter, we rejected the need for that action, the evidence suggesting that temporary fair-trade workers felt no less involved in fair-trade than did their permanent peers.

It is self-evident that the legitimacy of comparing two groups increases if they were closely matched to begin with. In richer datasets one may be afforded the luxury of dropping, matching and more purely randomising. Where that luxury is denied, one must exercise appropriate pragmatism i.e. try to ascertain if a handicap exists, and thereafter, if it does exist, factor that inequality into the analysis and interpretation. In the absence of a time dimension, we cannot make a formal statement as to whether each group started this race at the same point. We can however fill this gap with a germane piece of local knowledge i.e. that all of the fair-trade observations were taken from an area which local people refer to as "the dark side of the mountain"[17]. This term refers to the differing degrees of darkness that the shadow of apartheid cast. While the nation as a whole bore witness, some enclaves of South Africa offered a deeper embrace of this defunct ideology than others. There is indeed anecdotal evidence – folk knowledge – to suggest that the fair-trade workers in this sample came from a relatively more disadvantaged background than the counterfactuals. In our dataset we find evidence that dances to the tune of that local awareness, and when this arises, in line with the term employed by local people, it is stated explicitly as 'The dark side of the mountain hypothesis'. Corroboration of this hypothesis permeates both the analysis and the conclusion.

The remainder of this descriptive statistics section will be dedicated to reporting proportions and test results for group independence. The reader should bear in mind that the dual occurrence of having a binary group variable (rather than an intensity), along

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[17] Source based on conversations with Prof. Joachim Ewert of the University of Stellenbosch.

with the fact that so few of our other variables are continuous renders the statistical toolbox a little lighter than might otherwise be the case. With data of this sort, 'improvisation is more rule than exception. For example, one may rightly question the use of correlation coefficients that are derived from discrete variables. This contention is neither new nor settled. Indeed, Pearson and Yule were known to have fallen out over a disagreement about the legitimacy of considering discrete variables as approximations of underlying or latent continuous variables (Cox 1974, 2008[18]). It is impossible to be watertight in matters of this nature and, as is often the case, elegance is not the option some may wish it to be. Our strategy will be to deploy an array of measures so as to seek legitimacy by way of attrition. As our outcomes can be ranked, we can make use of Spearman and polychoric metrics. However the element of patchwork comes via one of the group variables being dichotomous, and so we do not think it wise to necessarily pay much attention to the intensity of the correlation coefficients. Rather, we will focus more on the sign and the significance. The combination of a rank and dichotomy does however provide no methodological qualms for Kendall and chi-squared tests. Therefore, cross referencing the p-values from those tests with the ones from the correlation coefficients should iron out of few of the creases that some will feel exist from having had to force a rank coefficient from a combination which is part binary. As a further injection of rigour, when appropriate we will convert the rank order variables into a dichotomy and see what level of significance can be generated from tetrachoric correlation, to see whether or not these p-values corroborate other metrics.

4.2.1 Material Welfare: income, expenditure and ownership of goods

The results of all pair-wise independence tests for this section are listed in Appendix 4.10. All income and expenditure figures are quoted in South African rand. Income

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[18] Cox discussed in a number of exchanges on the online Stata discussion forum (Nov 20th 2008)

numbers can in this context be a bit slippery, as there exist very human incentives to deviate from the truth – and a legitimate preference for privacy. An added twist of intricacy being that the incentives are not necessarily unidirectional, rather side-by-side there can exist enticements to both inflate and deflate the unit of measurement depending on where a person is. It is more intuitive than scientific, but one may be willing to offer sympathy to the conjecture that, as the social setting of all interviews was identical, propensities to be dishonest can be assumed to be unidirectional, or at least symmetrically distributed between the sample and the control group. Ultimately, how comfortable one is with the income variable is, up unto a point, a matter of personal choice. Irrespective of one's personal inclinations, the general ethos of this analysis is that evidence is cumulative rather than authoritative, nothing is definitive in isolation – each observation adds its worth.

Table 4.1 Monthly Household Income

	Fair-trade			Non fair-trade		
	Mean	Median	Mode	Mean	Median	Mode
Household income	2114	1990	1500*	2336	2180	1090
Household income per capita	581	480	400	555	500	363
Household expenditure	917	800	1200	1039	1000	1000
Household expenditure per capita	264	200	200	264	231	200

*There were two modes 1000 and 2000, so we take the average

The non fair-trade people do slightly better in respect of average absolute household income, however given that their households are on average slightly larger, this comes as no revelation. The number of dwellers is such that we would expect to move towards

convergence or see a slight reversal when we make a per capita adjustment, and that is precisely what we observe (Appendix 4.11). The per capita performance is more balanced, and the average reverses to favour fair-trade. However, a t-test does not reject the null hypothesis of household per capita incomes being the same. So, to provide a benchmark of sorts, observations were made of a number of semi-skilled professional clerical workers that the winery employed. It is a token sample of just n=7, so the figure is ballpark, yet it is interesting because one may be surprised at the modesty of difference. The mean and median monthly household incomes of this group of clerical professionals respectively came out at 2733 and 2900. This in turn translates into a per capita average of 644.

The story for expenditure is not dissimilar to that of income (Appendix 4.12). The per capita figures fall into line and a t-test fails to reject the equality of means. Incomes and expenditures are not quite normally distributed, but they are log-normal and it is comforting to report that the basic upward trend between income and expenditure is intact.

Accounting pragmatically for those who refused to answer, it's accurate enough to infer that almost none of the workers pay any form of direct tax. Symmetrical across groups, there is however a strong take-up factor of between 80 and 85% for the state-sponsored 'unemployment insurance fund' (UIF). As well as being an unemployment cushion, the UIF program is designed to provide provisions that relate to a wide variety of occurrences; illness, maternity, adoption and dependence. In addition, there is balance between groups in respect of governmental assistance, as 12% of each group have received some form of state grant.

When in comes to the punctuality of wage payments there was a margin of difference between groups. Around 10% of the control group reported a delay in receiving their salaries, whereas the figure for fair-trade is around 1% (see Appendix

4.13). Tests for a relationship give rise to disparity. Spearman and Kendall reject the presence of a relationship, while chi-squared appears to support it. The reason for this lack of continuity is the relative swellings in the two extreme values of the control group. Chi-squared does of course not consider category ranks. If one is willing to accept the reasoning that, in a repeated game, there is no real reason to consider there to be a rank between if a worker is paid in advance or exactly on time, we can craft something from this (indeed, there may even be an inverse ranking in that advanced payment to a person of ill patience can be more pitfall than blessing). This reasoned rejection of rank suggests a preference for the chi-squared result. On balance this variable is simply a descriptive statistic which exhibits a slight advantage to fair-trade. However, thin as the numbers are, it is better to state a simple descriptive statistics in which we cite that there appears no systematic problem regarding the timely payment of wages in general. Instances of delay are isolated in that they do not appear clustered in any one place or group – all farms are generally good and equal.

The official minimum wage for farm workers in South Africa is R1,041 per month. (US state department 2008). When asked about their actual wage in relation to the minimum wage, over a third of the population declined to answer or claimed that they did not know (Appendix 4.14). This lack of self-knowledge as to a person's legislative rights is a worthy finding in itself, and it is only candid to mention that the non-respondents were predominantly from the fair-trade group. When we factor out the people who do not know, (see Appendix 4.15), the data gives rise to the following proportions. 11% of fair-trade workers claimed to receive less than the minimum wage. The equivalent figure for the counterfactual group is 14%. 56% of non fair-trade workers stated that they received exactly the minimum wage, and that proportion rose to 78% for fair-trade people. The largest percentile divergence emerged between those whose wages surpassed the minimum wage. A third of fair-trade workers alleged to

have a wage that exceeded the minimum wage, whereas fewer than 8% of the control group fell into that privileged category. As 'a lack of knowledge' cannot be accommodated in the rank, the metrics which are reported in line 2 of Appendix 4.10 relate to the sample which precludes those who 'do not know'. Within the bounds of 99% confidence, chi-squared is firm in its rejection of independence, and at similar levels of confidence fair-trade receives the backing of the other tests. It is however worth mentioning that these findings are possibly prone to the influence of gender and class of labour. While males and females are proportionally similar in respect to those who receive less than the minimum wage, a disparity occurs in that only 7% of females receive above the minimum wage, whereas the equivalent figure for males is around one third. All females who enter this bracket of good fortune are fair-trade affiliated. Also, a quarter of all seasonal workers end up with less than the minimum wage, and just over 4% of seasonal workers manage to take home in excess of the minimum wage.

A person's reservation wage is defined as the lowest wage that a person would accept, below which they would seek alternative employment. It's difficult to know precisely what the reservation wage portrays. Loosely, we can perhaps consider it to be a sort of indicator of personal expectations and, possibly, self-esteem. The fair-trade group exhibits a significantly wider variance, yet the medians are identical (500), and while the fair-trade average (602) is slightly above the non fair-trade average (561), the difference is not deemed to be statistically significant.

Enquiring what a person's action would be if their wage was to fall below that of their reservation requirement is helpful in two ways. Firstly, by dissection of an agrarian and non-agrarian option, we may shed some light the on the previously cited 'developmental critique' whereby the process of industrialisation is potentially repressed. Secondly, that same dissection of 'city vs. countryside' possibly tells us something about a person's current level of contentment. Equal across both groups, a

quarter of the population confessed to simply not knowing where they would transport their labour in the event of an unacceptable wage level. Dealing with those who did have an idea as to their preferred course of action, in terms of straightforward binary choice, 45% of fair-trade workers indicated that a low wage would push them into urban areas. The equivalent proportion of non fair-trade farmers who claim they would turn their backs on agriculture stands at 66%, and tests of independence support that this difference is significant (line 3 in Appendix 4.10). It must however be noted that this 'city vs. countryside' dissection is a highly solicited variable, in the sense that we had to use a 'what if your wages fell' scenario to extract it. In absence of the hypothesised wage fall, three quarters of each group indicated that they had never considered relocation. Symmetry of the picture was completed by the remaining quarter, those who had considered relocation, exhibiting a 50:50 split between urban and rural preferences (Appendix 4.16).

The ownership of consumer durables appears clearly skewed in favour of the control group. An index of ownership was constructed across four consumer goods; television, radio, fridge and mobile phone. Each is weighted equally, so a person scores a point for each good they own (Appendix 4.17). From this we derive a variable that is discrete and ordinal. Sporting respective means of 2.1 and 2.4, a t-test of equal means indicates that the difference is significant. With the exception of a polyserial test, which sits on the fringes of 90% confidence, all other tests firmly support there being a lack of independence in which being affiliated to fair-trade is associated with less ownership of consumer goods. One may take the view that a mobile phone is potentially a work tool. This may at times be the case, however the results are not affected by the removal of the mobile phone from the index. This is potentially a stark message for fair-trade, however as incomes and taxation appear constant, the most obvious variable to turn to in search of balance would be savings.

Savings is always an immensely tricky variable to come to terms with. Past the autonomous point, one cannot make a blanket statement about as to what degree savings are the product of wellbeing. Fluctuations can resonate from any number of factors, formulation of the real rather than nominal variable (i.e. purchasing power), time preferences (i.e. life-cycle hypothesis), feelings of future security, perceptions of continuance and volatility (i.e. permanent income hypothesis), and other socioeconomic quirks such as one person's luxury being another persons 'taken for granted'. All the same, it is broadly healthy that our data show a upward relationship between income and saving ability, the significance of which can be turned on or off with different sleights of hand.

Overall savings results are displayed in Appendix 4.18. Just over half of the fair-trade group insists that their incomes do not permit them to save any money at all. The proportion of non fair-trade people who cite their feasible thrift level to be zero is significantly higher at 68%. The middle ground is occupied by roughly a third of each group. Given that mean incomes show no systematic difference, it is interesting to observe that just under a fifth of fair-trade workers appear able to save in excess of 10% of their income, whereas virtually none of the control group occupy this bracket of good fortune. Tests for independence are unanimous in their rejection of no association, and a t-tests strongly supports the alternative hypotheses of fair-trade being associated with an ability to save (line 5 in Appendix 4.10). Coupling this finding with the presence of equal incomes, one thought to entertain is a state of affairs whereby fair-trade workers somehow experience a lower cost of living, hence an inspection of subsidies will appear in due course.

Too large a contingent declined to answer for us to draw any serious inferences about how people managed their savings. From those that responded, there were a few subtle hints that favoured fair-trade. The control group displayed a higher tendency to

keep their savings at home, rather than in a bank, while fair-trade people appeared more likely to be making use of a savings program being run by their farm (Appendix 4.19).

Borrowing, like saving, can be indicative of either health or dilemma – in the case of saving, a possible 'expected' dilemma. In this dataset, barring the two polarised corners of choosing to borrow from family/friends or from an individual private money lender, it is difficult to attach a spectrum of 'friendliness'. There is good balance in that three quarters of each group have not borrowed any money, but this dictates that when we divide borrowers up into subgroups based on their sources of finance, the numbers become somewhat slim – too slim for serious inference. A worthwhile observation is that the data hints that the people who borrow are those who are slightly less well off in respect to income. To be specific, the borrowing households are on average 100 rand per month per capita less well off than non-borrowers, and this difference shows up as being significant. With respective percentages of 6 to 8, slightly more fair-trade people had borrowed from friends or relatives. Across 12 different farms, just fewer than 12% of fair trade workers had borrowed funds provided from the farm which employed them. The overall proportion of farm-based borrowers amongst the control group was 4% less than in the fair-trade group. It must however be noted that, without exception, every non fair-trade farm did lend money to at least one of their workers. A small proportion (just under 6%) of the control group had borrowed from a bank, while bank borrowers in the fair-trade group were practically nonexistent. The numbers are too thin to speak of significance, but the mean and median incomes of bank borrowers were marginally higher than for non-bank borrowers. Perhaps the most illuminating observation of these borrowing statistics is that no fair-trade worker reported borrowing anything from a private money lender, whereas just over 8% of the control group had utilized this often exorbitant channel of finance. Notwithstanding that the absolute amount of borrowers conspires against the making of a more robust statement, it would not seem

unreasonable to suggest that fair-trade workers have access to more friendly avenues of finance.

When it comes to the basics of present day welfare, few variables can boast a gravitas equal to that of hunger. There is room for improvement, but the numbers are broadly healthy and the margin between groups is slim. Less than 5% of fair-trade workers cited that they have occasionally faced shortages of food. The equivalent figure for people who had no affiliation to fair-trade rises to just over 7% (Appendix 4.20). As a point of reference, the mean household per capita income of people who suffered food shortages stands at 470 per month. The comparable figure for those who experienced no dietary shortfall is 580. Variances are unequal, and a t-test does suggest that per capita household income is significant in this matter.

Given that we have observed little difference between the incomes of the two groups, it is especially important to inspect for subsidies. Interestingly, the question relating to whether or not the farm provides subsidised food and accommodation saw 15% of the population expressing uncertainty or declining to answer. Of those that did respond, the number who were the recipients of subsidised food alone was negligible; only 4 in total, residing 3 to 1 in the fair-trade group. These are probably people who are close to the farmer, a foreman or the spouse of a worker who may themselves work as a housekeeper or similar. These sorts of arrangements are not atypical in the agrarian set-ups of post colonial nations. The breakdown of the data in this case dictates that we are essentially interested in looking at two outcomes; those who received subsidised accommodation and those who did not. Within this dichotomy, 84% of the population were granted assistance with accommodation, while the remainder were not. Fair-trade fares well here, as only 12% of its workers did not receive accommodation; while the respective proportion for non fair-trade workers was double that. The corollary is that 88% of fair-trade workers receive subsidised accommodation, in comparison to 76% of

the control group (Appendix 4.21). Chi-squared rejects independence in favour of fair-trade, and a tetrachoric correlation backs up that result. In spite of the positive outcome for fair-trade, this is a classic case in which one may suspect the problematic influence of the permanent worker variable. Similar tests of independence between subsidised accommodation and whether or not a person is a seasonal or permanent worker indicate the sort of balance that could scarcely be more fragile. Chi-squared barely fails to reject independence at 5% (p=0.055). The tetrachoric coefficient is slightly more compelling in its rejection (p=0.079). The categorical overlay that further fertilises the propensity for these descriptive statistics to be deceptive stems from the previously cited lack of independence between gender and seasonality of labour. As one may suspect, tests for independence between gender and subsidised accommodation tell us that these categories are not independent, and that being male carries with it a significantly higher likelihood of benefiting from subsidised accommodation.

4.2.2 Immaterial welfare: health education and children

An assessment of health and education variables can be seen to serve two 'time specific' purposes. There are a number of variables which can be considered 'true to the moment' variables. For example, a question such as 'when you are of ill heath, what options are available to you?' relates, of course, to options that are 'presently' available. Alternatively, there are what we may consider to be 'maturity' variables. These are variables which straddle different generations. Notable examples include enquires into educational attainment and child mortality. Within our sample, fair-trade has not been around long enough to have exerted full group influence on variables such as these. Maturity variables can be thought of as 'half ripe fruit'. We can pick them, they give us an indication as to the quality of the seeds that were planted, and help to give us an signal as to which direction things might be heading. The time may come when these

variables fully ripen into reliable dependent variables, but that time has not yet come. This does not mean that these observations are not of use; to the contrary, they may be put to fine use. The argument being put forth is that, at this stage in the existence of fair-trade, it is better to employ entities such as 'child mortality' and 'education' as partial benchmarks of 'general beginnings' as opposed to dependent variables of present day welfare. This matches well with the previously stated endeavour of trying to shine some light onto the 'dark side of the mountain' hypothesis. All correlation results are listed in Appendix 4.22, and a person's level of education marks the first port of call.

The numbers for education carry just a subtle haze of difference (Appendix 4.23). Around 10% of each group received no formal education. As one would expect, at 51, the mean age of those who have received no education is substantially above that of the sample mean. All tests for independence indicate that being born more recently is strongly associated with higher educational attainment. The next bracket of achievement presides over a point of difference; 37% of fair-trade workers started but did not complete primary school, whereas the equivalent figure for the control group was superior at 23%. The proportions of those who completed primary school are practically equal; 18% for fair-trade and 17% for the control group. A point of difference that favours non fair-trade people can be seen in those who started but did not complete secondary education. 44% of the control group claimed this level of education, whereas only 27% of those in the fair-trade group boasted the same level. When it comes to those who have completed secondary school we are dealing with a minority of only 5% in each group. Tests for independence all support a rejection of independence, and correlation coefficients unanimously favour the control group; a minor point of dilution being that, with a confidence interval of 90 percent, the polychoric metric shows slightly weaker support than the others. At a stretch, less than 6% of the sample occupies a demographic group which fair-trade could feasibly have touched in respect

of the time it commenced. By that logic, education offers itself as a classic maturity variable, in which case, the superiority of the control group supports the hypothesis of unequal beginnings.

Next we turn to child mortality. When we say a person is 'eligible' to provide data in regards of child mortality, it simply means that the person is not eligible if they and their spouse have never conceived. It makes sense that these people are excluded rather than recorded as a positive 'no'. We report that of the 227 eligibles in the fair-trade group, around 20% of those have suffered some form of child mortality. With only 95 eligible people, it's a slim stable from which to derive our comparative control group figure, but of that contingent, 17% experienced some form of child mortality. Hence, the proportional performance of fair-trade was slightly inferior. However, as one may expect from limited numbers and slim margins of difference, it is not surprising to see tests for independence failing to support the existence of a relationship. The distributional spread of age-specific deaths was largely symmetrical between groups, the only exception being that none of the control group had experienced the death of a child over 5 years old, whereas a tiny minority of the fair-trade group had. The restriction of 'eligibility' designates that we are already dealing with a subgroup of the population. If we were to further restrict the numbers to those who have had a child in the period since fair-trade arrived, the sub-sample would shrink to be of only anecdotal value. Based on that practical limitation, we engage child mortality as a maturity variable, and employ a simple dummy such that instances have an equal generational weighting. Therefore, it is not discouraging to observe what can be described as either the closeness of the two groups or else the edging ahead of the control group (Appendix 4.24). Limited eligibility and knowledge of previous labour movements conspire against the making of a more robust statement. Nonetheless, the observations do offer another subtle hint that either the groups are coming from an equal beginning, or else fair-trade

people may have started from a less advantageous position. In other words, the evidence put forth by this variable refuses to reject the dark side of the mountain hypothesis, and if we were forced to bet either 'for or against' that hypothesis, we would be sooner bet 'for' than against it.

Locality of child birth also provides a good indication as to the groups' relative starting points. It is somewhat fortunate that the two most common places of nativity in the sample are also the most straightforward to gauge the superiority of. The majority of births have taken place either at home or in a hospital. For the dataset as a whole, 30% of fair-trade workers experienced at least one homebirth. The equivalent statistic for non fair-trade workers falls to 17%. Similarly, 86% of fair-trade people had at least one of their children born in hospital, whereas that proportion rises to 97% for the control group. In each case, for both hospital and homebirth possibilities, appropriate tests reject the suggestion that there is independence between place of childbirth and fair-trade. The tests appear to suggest that the control group has been more privileged in respect of facilities for child birth. There is however a degree of double accounting between those two options, whereby 19% of the fair-trade group and 14% of the control group record births in both options. While we do not have specific information on exactly which child was born where, it would seem plausible that 'hospital births' are likely to represent more recent births. If we can confirm this, and at the same time see if independence prevails for later births we will be afforded evidence both in support of the dark side of the mountain hypothesis, and partial evidence in support of a fair-trade facilitated catch-up. Factoring in the exclusion condition of 'only including parents who have a child born in the last five years' does indeed see the groups draw near level. Under this condition, the same tests reverse their previous indications and affirm independence between fair-trade and locality of child birth (lines 3-6 in Appendix 4.22).

When people were asked if they expected their children to experience a higher standard of living than they themselves have, the response was one of broad optimism in both groups. The vast majority of people expected the lives of the children to in general brighten (Appendix 4.25). 90% of the fair-trade group exhibited positive expectations for their children, the proportion falling slightly to 86% for the control group. 4% of each group expressed uncertainty. While the fair-trade group slightly outperformed the control group in terms of positive proportional responses, chi-squared fails to reject independence, and if the uncertain response is ranked as a midpoint, Spearman, Kendall, and polyserial measures of correlation all echo the same opinion. With the uncertain responses stripped out, a tetrachoric coefficient backs up the results of other tests. It is perhaps worth mentioning that similar tests of correlation between age and generational expectations indicate that younger people are more optimistic, though results were significant only at the 90% confidence interval.

Staying on the topic of children, on balance, one may consider that if a person exhibits a preference for their children to continue to make a living via farming, this could be taken as an expression of general contentment. 'On balance' is stated for the reason that this variable is perhaps prone to accusations of informational asymmetry. For example, some may state that if a participant desires for their children to remain in farming, this may be indicative of a lack of knowledge of opportunities that lie elsewhere. As is the case with many interpretative variables, one is entitled to deploy one's own interpretation and debate thereafter what the results indicate. The chief problem with handling this variable is in how we interpret 'indifference', and whether or not we decide to consider 'indecision' and 'indifference' as identical or sufficiently distinct from one another. The most sincere path we can follow is to experiment with all reasonable combinations. In terms of straightforward responses and proportions, within which there is not much difference between the two groups, 41% of each group

indicated that they did not wish their children to remain involved in farming. Displaying respective percentages of 42 and 47, just 5% more of the non fair-trade group answered a clear 'yes' to wanting their children to remain in farming (Appendix 4.26). However, because a higher proportion of fair-trade people were undecided, proportions each converge on 50 if we exclude the 13% of the population who 'did not know' or 'appeared undecided'. If we go one step further and strip out all possible indifference and investigate just the two corner solutions of yes and no, we again observe close to a pure tie, with the control group just edging the 'yes' proportion 54% to 51%. We consider that the most intuitively sound path to follow is by directly transforming indecision into indifference, and generating a sequential rank in which that is the midpoint – this way we do not waste data. This does of course return us close to our original state of play, with the difference not being in the negative responses (which are equal), but in just 5% more of the fair-trade group expressing indifference. Unsurprising from the reported proportions, irrespective of which combination is tried, sequenced discrete, binary, with or without an amalgamation of uncertainty and indifference, appropriate tests unanimously point to independence.

Continuing with the theme of children, we are presented with an opportunity to comment on, and inspect for, a possible adverse affect. In particular, a standardised hypothesis might be to question whether fair-trade gives workers an incentive to put their children into employment at the expense of education – the pull of what may be perceived as a transitory draw, so to speak. There is no difference between any groups when it comes to ensuring children of primary school age attended five days of school. The same is almost true for children of high-school age, with the exception that there are a number of dropouts. These dropouts are however, not of a number sufficient to generate suspicion, and that is true both for the sample as a whole and between groups. When questioned if people sometimes withdrew their children from school during the

harvest period, the results offered up a little more colour. If we include 'refusals to answer' we can report that around 82% of fair-trade workers are adamant that they do not withdraw their children from school. However, the proportion for the control group rises to 91% (Appendix 4.27), and chi-squared supports the suggestion of the relationship not being independent. If however we behave a bit brazenly with the data, we can add an interesting twist to the narrative of this variable. If we hypothesise that a person may by be embarrassed to report that they withdraw their children, but at the same time have no incentive to be elusive if they do keep their children in school, we can tease out some cracks in the previously cited rejection of independence. It is possibly too bold a use of the data, but the practicalities of mining this hypothesis are quite undemanding. If we simply transform the indefinite responses into observations in which children are withdrawn, this dilutes the rejection of independence such that it only receives 90% confidence (line 10 of Appendix 4.22 records both results).

Moving away from the subject of children, and more towards the welfare of the workers themselves, let us consider some data on personal health. We can report that the mean number of days of ill health over the course of a year is 2.65. When split into groups, the fair-trade group weigh in with a slightly lower figure of 2.59 as opposed to 2.8 for non fair-trade. Wider for the control group, variances are unequal, and a t-test confirms that the averages carry no significant difference. The mode was by far the most dominant statistic for this variable and both groups stood at zero. Over 52% of the fair-trade group stated zero days of illness, while the corresponding figure for the control group falls to 48%. Taken at face value these numbers paint a picture of health that is universally sound. Indeed, the numbers portray an image of health fettle finer than many workers in more sheltered nations and jobs. If however one wishes to bring that last comparative statement to heel, one may succumb to a touch of 'cynical

balance' by suggesting that this variable is massaged by a reality in which a person is often only as ill as they can afford to be.

The time period in which fair-trade has been active dictates that 'injuries at work' is not an overly insightful variable. It is however a fine compliment of balance that the dataset records symmetrical values of 90% injury avoidance in both groups. If one wishes to use this variable to pass judgement on the occupational health goals of fair-trade, one is best advised to wait for it to mature.

When it comes to assessing options that are available to people in the event of ill health, the two groups generally have near equal access to clinics and hospitals, though fair-trade does however pull ahead when it comes to visiting doctors. 76% of fair-trade workers have access to a clinic, the proportion for non fair-trade stands slightly higher at 82%. The difficulty associated with 'clinics' is that, particularly in developing countries, they can vary substantially in terms of quality. It is not that hospitals show no variation in quality, however in the regional context that we are in, it is reasonable to assume hospitals to be universally superior to clinics. With respective proportions of 24% and 28%, slightly more fair-trade people have access to hospitals. In respect of both options, appropriate tests uphold the case of independence. The one finding in which independence is rejected is that of access to visiting doctors. We consider this to be a relatively privileged option of health. In all, over a quarter of fair-trade workers appear to have this option of visiting doctors at their disposal. This compares to an equivalent figure of only 6% of the control group (Appendix 4.28).

The question whether or not a person's standard of living has improved in comparison to that of the previous generation forms part of a critique by which the governance of all nations should ultimately be judged. The history of South Africa being what it is, dictates that a question of this nature holds within its walls a more intense sort of gravity. There is little difference between our two groups; over 72% of

fair-trade people answer positively, compared to 68% of the control group. Slightly in favour of the control group, minorities of 4% and 5% felt that their standards of living had actually reduced over the course of a generation. Perhaps concern should lie in the fact that a quarter of the sample as a whole felt that their standards of living had remained much the same as that of their parents. Within this uninspiring remark, via respective percentages of 22 and 29, fair-trade workers rank slightly better than non fair-trade labourers (Appendix 4.29). Unsurprising from the uncovered proportions, all relevant tests of association suggest fair-trade has neither a negative nor positive relationship to generational living standards.

Refining the period of enquiry to the last 3 to 5 years grants us a vantage point tailored to the existence of fair-trade in this region. Indeed, fair-trade receives one of its most unambiguous compliments via a subjective three-way ranking on what direction people's quality of life has taken over the last 3 to 5 years (Appendix 4.30). Over 80% of fair-trade affiliated workers considered their lives to have improved over that period of time. The proportion for the counterfactual group falls to 54%. Very few in each group considered their lives to have worsened, respectively 3% and 5% in favour of fair-trade. Hence the difference is made up by 41% of the control group feeling that their standards of living had stagnated over the course of that period. Chi-squared and correlation metrics firmly reject independence between groups. The next section offers an insight into the relationship between workers and their farms, and aims to look at what authors and organisers commonly refer to as 'participation'.

4.2.3 Participation and interaction with fair-trade

An engagement with 'participation' gives voice to some of our most polarised findings. Indeed, many of the divisions are so cornered that it would be nonsensical to try to subject them to statistical tests.

Organised labour of some sort is a principal component of fair-trade. On paper it is a stringent condition of certification. In practice the condition is met, however different groupings preside over different levels of cohesion and solidarity. The usual binding of sellers in agriculture does of course take place via the formation of a co-operative. For labour, the like of which we are dealing with in this report, the term of use is 'joint-body'. This is essentially a localised union. The concept of the joint-body in this setting is neither new nor unique to fair-trade. In line with furthering its stated agenda of empowerment, fair-trade makes an attempt to galvanise these joint-bodies. This section is an attempt to shine some light on how successful fair-trade is in that endeavour.

Everybody in the sample has the option of joining and participating in their local joint-bodies. Yet, as is to be expected the world over, some people are more enthusiastic than others. Some participate with verve, while others are detached and/or cynical when it comes to the activities of the elected bodies that represent them. Even if a person states that they do not hold membership or if they claim to not really know if they are a member, so long as that person works on a farm in which a joint-body engages in collective bargaining, then that person can be thought of as a passive member. By that mark, we make a distinction between active and passive members. If one cares to accept the reasoning that to be associated with active membership is progressing the aim of empowerment, fair-trade then stands tall in this dataset. There is a near perfect mirror of difference, in which 98% of fair-trade workers are active members, and 96% of non fair-trade workers are passive members (Appendix 4.31).

The next step is to ascertain to what degree a person's membership is active or passive. An index was constructed to try to capture the depth of a person's participation. A person scores 4 if they act as a representative. Non-representatives each receive a single point if they involve themselves in any of the following three activities; voting, attending meetings and/or participating in discussions. With respective means of 2.20

and 1.08, fair-trade decisively outperforms the control group. The mean difference is strongly significant, and all other appropriate metrics of correlation support that fair-trade workers exhibit a much higher degree of participation (Appendix 4.32). The only activity in which the numbers come close relate to those who partake in voting for a representative. Despite the stated relative lack of interest, 66% of non fair-trade workers do actually turn out to vote for a joint-body representative. This is still less than the 72% of fair-trade workers who vote, but it is nonetheless one of our closest points of convergence with respect to joint-body participation.

The breakdown was equally as stark when workers were asked if they had confidence in the joint-body that represented them. None of the control group explicitly claimed to have 'no confidence' in their joint-body. The issue that arose was that the vast majority of counterfactuals, 96%, shied away from giving a definite response. This response (or rather lack of), matches well with the level of disinterest that was observed and previously employed to designate whether a person was an active or passive member. It is less than positive in respect of participation, but should 'disinterest' be encoded as negative or pure indifference? It is likely to harbour a degree of each, and the reader can make up their own mind as to precisely how they wish to interpret that distinction. For now, let us simply review the numbers. The contrast with fair-trade is again an inversion of difference. Almost 95% of fair-trade workers cited that they did have confidence in the governance in their joint-body. Less than 4% were adamant that they did not, and the remaining few offered the same reserve and/or indecision that dominated the control group response.

When questioning whether or not workers believed that the joint-body had helped to improve living standards, we observed a continuance of polarised trends. The number of plainly negative opinions rose amongst fair-trade workers, but at 7% the figure is eclipsed by the 91% of fair-trade workers who where adamant that their joint-bodies

exhibited a decidedly positive impact on their standards of living. Bearing a similar parallel to the response on governance, 96% of non fair-trade workers expressed indifference and/or apathy (Appendix 4.33).

Further support for the divergence of the two groups in respect of their farms/joint-bodies can been seen via 34 people in the dataset indicating that their farm had over the years afforded them at least one financial loan. All of these borrowers resided on fair-trade farms, and the distribution was such that it encompassed 11 separate farms.

Fair-trade workers also had the perception of receiving more health and educational support from their joint-bodies. A quarter of the control group considered that they received no assistance with either health or education. This compares to only 5% of fair-trade workers expressing the same perception. Just over half of fair-trade workers stated that they received some form of assistance with both health and education, whereas less than 5% of the non fair-trade group made that claim. The gap between the two groups does however acquire a stroke of moderation in that 70% of the non fair-trade workers were of the view that their farm/joint-body provided support for at least one of those two possible points of welfare (Appendix 4.34). Something to bear in mind with this variable is that it may suffer a degree of inconsistency. For example, sometimes the farm or the joint-body delivers support on a 'case by case' basis, and so there were instances in which a person recorded no medical assistance, when in fact this may have been because they simply neither required nor requested any. Nonetheless there is no apparent reason to suspect that the number of 'case by case' requests is different between groups, and so the variable retains its worth.

Continuing this line of enquiry, one of the few places in which the difference is not particularly pronounced is in the tendency of the farm to keep its promises and so meet its obligations. The question was phrased to be inclusive of general verbal agreements. 71% of fair-trade workers looked favourably upon the tendency of their farms to keep

their word. 16% of that group expressed the opposing view that their farms did not always deliver upon commitments made. The equivalent figures for the control group are that 55% offered a positive view of their farms, while 24% felt there existed sufficient past examples to call into question the credibility of future promises.

When questioned specifically about the role of fair-trade, over 90% of fair-trade affiliated workers felt that fair-trade bore responsibility for the increase they experienced in their living standards; 6% were undecided, while 3% were of the opinion that fair-trade had made no meaningful contribution (Appendix 4.35). These favourable proportions fell a notch when fair-trade workers were questioned on whether they felt fair-trade was sufficient in the provisions it makes for living costs and family development. While over three quarters of the relevant population felt that fair-trade was sufficient in this context, 16% were of the view that fair-trade fell short of what is required. The remaining 8% were undecided or unopinionated (Appendix 4.36). As however this point of enquiry essentially asks a person if they feel they need more, the ground is particularly fertile for strategically rational responses.

Pondering whether or not people expect fair-trade to persist into the future generates a question of textbook relevance. Equating the response to consumption theory, in particular, Friedman's permanent income hypothesis lays a path by which we may see if fair-trade bestows upon its workers the confidence to spend/invest their gains. In terms of personal investment, the question may be more relevant for small land-holding farmers than what it is for hired workers. Nonetheless, be it for the actions it generates, or simply for itself, a feeling of 'security of income' is a cardinal variable of welfare for most individuals. That said, it is broadly positive for fair-trade that 88% of recipients felt they could rely on fair-trade to continue. 7% were unsure and 5% were convinced that fair-trade was destined to dry up (Appendix 4.37).

As we are dealing with workers rather than farmers, it would be dubious to expect the survey to deliver a well focused insight into possible oversupply. We can however tweak a 'would-be' oversupply enquiry and extrapolate from it a related enquiry into labour allocation. When asked if fair-trade affected the worker's decision to be involved in the particular commodity that they were involved with, 35% of fair-trade workers felt they would spend more time on a different product if fair-trade did not exist. 43% insisted that they would be equally involved in grapes irrespective of whether fair-trade existed or not (Appendix 4.38).

Such was the general inclusiveness of the South African Fairhills project, it comes as little surprise to find that fair-trade[19] materialises more in communal goods than in personal incomes. While we know from local organisers that this is the direction in which fair-trade monies are generally channelled, the surveys themselves captured people's perceptions of where finances have gone. 10% of people confessed to simply not knowing where the money goes, and a further 5% were entirely incorrect in thinking that their share of fair-trade turned up exclusively as a personal dividend. Around a quarter of people were partially correct in thinking that the gains of fair-trade were distributed to them through a combination of personal income and community projects. 59% were correct in their reckoning that fair-trade gains made their way to them largely in the form of community projects (Appendix 4.39). Indeed, given the numbers of people involved in this sort of plantation labour, communal deliverance (i.e. fair-trade as public good) likely makes more sense than a straight individual dividend. Guided by what we have observed in descriptive statistics, the next section attempts to refine the story by piecing together a number of models.

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[19] We are referring to fair-trade as a general entity; we are not differentiating between the premium and the price, but simply looking at the perceived net contribution of the entity as a whole.

4.3 MODELS

From the onset, it should be well understood that models which employ this sort of base level data require a broad reading. We report numbers in the way that general conventions demand we do, but advise that the reader pay broad attention to three things; the direction of the relationship, relative general magnitudes, and levels of significance. As is the case with a lot of socioeconomic enquiry, decimal points should be regarded as fair-weather friends.

The series of models comprises a number of binary dependent variable regressions. Options of ordered discrete dependent variables were considered but rejected for two main reasons. Firstly the distribution of the responses rendered it impractical. Secondly, while numerous 'goodness of fit' tests help guide our choice of model, one of the particularly satisfying aspects of working with a binary dependent variable is that one can actually observe a real hit rate. We see exactly the number of times the model is perfectly correct in predicting that a person falls into a particular group. We are not afforded this luxury for models in which the dependent variable is discrete. This is because a division of the singular threshold (Pr=0.5) into smaller cuts, hollows out the middle group(s) by over predicting people into the upper and lower bands.

The models in use take the latent variable approach. Definitional of this approach, y^* harbours an unobservable magnitude, a benefit of some kind incurred to individual i. We don't observe the benefit in the sense of 'measurable' (ordered) utility, but we do observe if the particular action is present (y):

$$y_i^* = X_i \beta + u_i \qquad\qquad y_i = 0 \text{ if } y^* < 0$$
$$y_i = 1 \text{ if } y^* \geq 0$$

$$\Pr(y^* > 0 \mid X)$$

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$$= \Pr(u > -X\beta \mid X)$$

$$= \Pr(u < X\beta \mid X)$$

$$= \Pr(y = 1 \mid X) = \Psi(y^*)$$

Where $\Psi(\cdot)$ is the cumulative distribution function (CDF), in the case of the logit model, by definition, $\Psi(.)$ is the CDF of the logistic distribution (fatter tails than the alterative probit specification which employs the CDF of the normal distribution).

$$\Psi(y^*) = \frac{\exp(X\beta)}{1 + \exp(X\beta)}$$

There is no overriding reason to favour either CDF over the other; by and large results between the two exhibit only a hairline of difference, and both estimators are asymptotically consistent.

Parameters are estimated with maximum likelihood techniques, under which the probability of the outcome conditional on X conforms to the following:

$$\Pr(y \mid X) = \left\{ \Psi(X_i\beta) \right\}^{yi} \left\{ 1 - \psi(X_i\beta) \right\}^{1-y_i}, \quad y_i = 0,1$$

with the log likelihood for individual i stated as so:

$$\Pr(y \mid X) = \left\{ \Psi(X_i\beta) \right\} + (1 - y_i) \log \left\{ 1 - \psi(X_i\beta) \right\}$$

$L(\beta) = \sum_{i=1}^{N} \ell_i(\beta)$ being the log likelihood of the sample which is to be maximised with respect to k components of β. While the original equation indicates that x_j

exhibits a linear effect on y^*, the effect on the increased probability of y^* changing from 0 to 1 is nonlinear. $\Psi()$ is necessarily a nonlinear function of X, so as to prevent predicted probabilities from breaking the rational $0 - 1$ range. Hence, as is standard with models of this genre, the tabulated results are not the coefficients, but rather the marginal effects. Formally:

$$\frac{\partial \Pr(y=1\,|\,X)}{\partial x_j} = \frac{\partial \Pr(y=1\,|\,X)}{\partial X\beta} \cdot \frac{\partial X\beta}{\partial x_j} = \Psi'(X\beta) \cdot \beta_j$$

From here there are a number of options in respect of precisely what gets reported. We can report the overall marginal effects, the marginal effects for a specific group, and/or the average marginal effects. As well, for reasons of an intuitive interpretation, it can be appropriate to report 'odds ratios', which, simply and formally, are the unexponentiated coefficients (e^β) of the logit model. This in turn may be stated as; odds if the corresponding variable is incremented by 1 divided by odds if the variable is not incremented. More formally:

$$\frac{\Pr(event\,|\,x+1)/(1-\Pr(event\,|\,x+1))}{\Pr(event\,|\,X)/(1-\Pr(event\,|\,X))}$$

In contrast to marginal effects, individual odds ratios remain constant regardless of the values of other covariates. It is largely a matter of personal preference in regards which one prefers to read, My own preference of for marginal effects, however believing there to be value in knowing both, I report both. For convenience of presentation, the corresponding odds ratios are listed in Appendices 4.42 to 4.44.

In search of more robust findings, and in a related attempt to counter some problems of low counterfactual representation, each model delivers three specifications. In each case the pattern is uniform; x.1, x.2 and x.3. Regression x.1 is purely un-tampered data, the flaw being that it is the specification with the lowest n, and in some cases a low representation of non fair-trade workers. Regressions x.2 and x.3 expand the numbers by implanting a number of expected values. After regression x.1 is specified we look at which unanswered control variables caused particular individuals to be dropped, and carefully transplant them so as to bring the individual back into the estimation. The dropped observations are not a product of mismanaged data, they are products of the ethical guidelines by which this sort of data has to be gathered. Given that the balance in the data stands at two thirds to one third in favour of fair-trade workers, this means that, in the interests of utilising this dataset for all it's worth, there is a strong case for trying to bolster the counterfactuals. So, we match regressions x.1 against two other specifications in which we inflate the number of counterfactuals via a number of 'expected value' replacements. Regression x.2 pulls more counterfactuals into the dataset by replacing missing cells with expected values from the dataset as a whole. Regression x.3 on the other hand fills the gaps with the expected values of non fair-trade workers. The replacements have been kept to a minimum, and are fully detailed in Appendix 4.40.

Thankfully, in most cases we will see the regressions support each other; there are however some cases in which regressions appear somewhat unharmonious with each other. Naturally, discontinuity makes for a more taxing interpretation. There is no single formal benchmark by which to make a precise decision when regressions of this sort disagree. In such cases, we look at a combination of entries such as goodness of fit, variable reshuffles, and the number of individual replacements across a particular variable. Based around those factors we discuss relevant individual cases as they arise.

Appendix 4.41 contains an index table from which one can identify all variables which are being modelled. Some practitioners warn about the hazards of over-interpreting control variables. In terms of focusing the discussion they make a valid point, yet there is no consensus on this subject, and so how much one wishes to entertain a discussion of certain control variables boils down to personal preference. The approach of this chapter is to discuss them within moderation, mainly because we feel it adds some credence to the model if they are at least observed to show an intuitively sound direction, in which case permitting them to enter the picture contributes to a more rounded discussion.

4.3.1 Regressions 1.1-1.3: child to remain involved in farming

The first set of models $(1.1 - 1.3)$ attempts to ascertain whether or not fair-trade directly affects whether a person wishes for the next generation of their family to remain in farming. Inference is restricted to those with children under the age of 19. The dependent variable is 0 if the person answered 'no' to wishing their child to remain in farming, and 1 if they answered 'yes'. We will at a later point remind ourselves of the different interpretations, but for now let us concentrate on the ascertained relationships.

Table 4.2 Marginal effects on whether a person wishes their child to remain in farming

	Regression 1.1	Regression 1.2 (sample means)	Regression 1.3 (counterfactual means)
Dependent variable →	child_farm01	child_farm01	child_farm01
Age	-0.01208	-0.0138**	-0.0142**
	(0.00761)	(0.00662)	(0.0065)
Sex	0.1626	0.11761	0.12060
	(0.15064)	(0.11621)	(0.1157)
Co-Hab	-0.03487	-0.0157	-0.03580
	(0.13366)	(0.11469)	(0.1147)
Personal Education	-0.00345	0.00735	0.007573
	(0.06236)	(0.05119)	(0.0510)
Sick days	-0.00014	0.00069	0.002164
	(0.00906)	(0.00777)	(0.0075)
Regular savings	0.03155	0.06160	0.06655
	(0.05508)	(0.04894)	(0.04911)
Food & Accom	-0.12262	-0.00263	-0.01803
	(0.1484)	(0.1276)	(0.12793)
Educational support	0.30351**	0.43089**	0.348306**
	(0.1350)	(0.1740)	(0.17081)
Health Support	-0.22923*	-0.1302	-0.23124*
	(0.1350)	(0.11562)	(0.1219)
Child mortality	-0.28015**	-0.171656	-0.16483
	(0.1249)	(0.0869)	(0.08696)
Income per capita	0.00028	0.00029	0.00031
	(0.0002)	(0.00021)	(0.00021)
Expenditure per capita	0.00018	0.00026	0.00018
	(0.0005)	(0.0004)	(0.00045)
Financial Assistance	0.26303**	0.0084262	0.078255
	(0.1230)	(0.1021)	(0.10213)
Participation index	-0.005554	-0.00739	0.02044
	(0.06118)	(0.14952)	(0.05472)
Cease Farm	-0.4860***	-0.42447***	-0.4255***
	(0.09457)	(0.0869)	(0.0869)
Permanent	0.20294	0.05526	0.06775
	(0.16231)	(0.1495)	(0.1489)
Animals	0.27421*	0.19697	0.199748
	(0.1553)	(0.12684)	(0.12863)
Fair-trade	-0.23783	-0.3100***	-0.2882**
	(0.17598)	(0.1119)	(0.1283)
n	122	161	161
Area under ROC	82	80	80
Hit	75%	73%	70%

Numbers in parentheses are standard errors
*Significant at the 0.10 level
**Significant at the 0.05 level
*** Significant at the 0.01 level

The strongest and most significant variable for whether a person wishes their children to remain involved in farming is if that person themselves has considered ceasing farming. If the individual has personally given serious consideration to relocating their own labour, there is around a 45% higher chance that they do not wish their children to remain involved in farming. As is to be expected from the limited number of significant variables, the odds ratio exhibits more momentum. The odds ratio suggests that if a person considers relocating their own labour, this is associated with an 85% to 90% increment in the odds of that person harbouring a preference for their children to find employment somewhere other than faming.

A somewhat awkward variable to assess is the influence of whether a family have experienced past instances of child mortality. The direction of all coefficients presents us with reasoning that is broadly intuitive. In each regression the suggestion is that if a person's family have experienced child mortality there is upward pressure on them expressing a desire that their children seek alternative employment. The initial specification boasts 95% confidence and a magnitude of 28%. However, the two subsequent specifications cut that magnitude in half and discard significance. Interestingly, the odds ratio specification reduces the significance to 90%, before the follow-on regressions again reject significance and cut the odds ratio from 70% to 50% for a person being satisfied for their child to remain in agrarian employment. In all, we are suspicious of the significance of this variable, but are content to see that the direction of its pressure on the dependent variable is intuitively in order.

In terms of 'shifting significance' the variable which represents if a person has access to any financial assistance holds a similar challenge of interpretation to that of past instances of child mortality. Again, the coefficient is in an intuitively sound direction, the initial suggestion being that if a person is granted access to any financial assistance, this will increase by 26% the chances that they express an opinion in which

they are happy for their child to remain involved in farming. Stated as a singular odds ratio, the message is that financial assistance increases the odds that they will want their child to remain involved in farming by 194%. While the two subsequent regressions support the direction of the relationship, they starkly reduce the size of the coefficient and rebuff significance. The marginal effects fall to around 8%, and the odds ratio to a percentile of 35 to 40.

It would seem reasonable to state a compromised interpretation as; we suspect this variable of being mildly significant, we are content with its direction but consider that a marginal effect of 26% is an overstatement of its potency. Segregating the individual points of financial assistance did not increase the accuracy of the model, and so the variable was kept as a generic dummy.

For reasons which include them being two of our most transplanted variables, one must take extra care when interpreting the relevance of organisational assistance which is provided in relation to health and education. The negative coefficient on health is counterintuitive, and a low internal variance problem with this variable manifests itself as a collinearity problem and means that we do not trust the statement of its mild relevance in regressions 1.1 and 1.3. Therefore, coupling the rejection of its significance in regression 1.2 with the outcome that the two less trustworthy regressions only just permitted it to scrape into the 90% confidence interval, we opt to draw no inference from this variable.

While the level of replacement is the same for educational assistance, healthy internal variance and cross-model agreement in regards significance permit us to make a more robust statement in respect of this variable. As the inclusion of expected values inflates the educational coefficients in regressions 1.2 and 1.3, we state the magnitude from the first regression. If educational assistance is forthcoming, this will increase by 30% the chance that a person will express a desire for their children to continue to be

involved in agriculture. In addition, this variable carries by far the largest singular odds ratio of the model. Exhibiting ratios of between 4 and 6, the suggestion is that in-house provisions of education cut by 300 to 500% the odds of a person wanting their children to seek alternative livelihoods. The fall in the odds ratio between regressions 1.2 and 1.3 may be viewed as an indication of a link between fair-trade and organisational provisions for education.

When interpreting the fair-trade coefficient we are faced with a move from insignificance to significance and a coefficient with a counterintuitive direction. Diagnostic tests indicate that the under-representation of counterfactuals in regression 1.1 manifests itself in a collinearity problem between non fair-trade workers, ownership of animals, and the organisational provision of health assistance. For that reason, the fair-trade p-values in regressions 1.2 and 1.3 are considered more legitimate than those of regression 1.1. Hence the evidence suggests that, to the tune of 30%, fair-trade exhibits a significant and negative marginal effect in respect of people wanting their children to remain involved in agriculture. The corresponding odds ratio suggests that if a person becomes involved in fair-trade this reduces the odds of them wanting their children to remain in farming by around 70%. This result comes as a somewhat of a surprise. In one respect it may be taken as negative, but in another respect it may possibly be seen as fair-trade not perverting the incentives of a family wanting their children to progress beyond agriculture. One is entitled and invited to draw one's own lines of interpretation.

In terms of the sequence of this story, it's agreeable to have observed the relevance of the 'cease farm' variable in the above model, because the natural progression of this story is to look next at what factors influence whether a person has considered relocating their own labour. This is a variable which some may consider to be a purer representation of 'contentment' than the previous dependent variable.

4.3.2 Regressions 2.1-2.3: whether a person has considered leaving their job

The next set of models takes for its dependent variable a binary measure of whether a person has considered moving to work in a different place. In all, 75% of the population had not considered moving. The remaining 25% were split equally between wishing to remain in farming or move to a city. The split in the data is too thin to further investigate the 'agrarian–urban' labour moment hypothesis that the previous regression knocked on the door of. Rather we combine the numbers such that they are divided between those that have considered moving, and those that have not. Therefore, we take the latent variable to be 'contentment' which, in itself, few would disagree is a form of welfare. The dependent variable takes a value of 1 if the person has considered moving to work in a different place, 0 if they have not. We will see from the results below that this model resolves to be our least decisive.

The findings of the initial regression are not at all encouraging for fair-trade, the suggestion being that involvement in fair-trade is associated with a 22% increase in the chance of a person wishing to relocate their labour, with an odds ratio of 6.3 suggesting a more acute relationship still. The expected value models do however offer a reprieve for fair-trade in this finding. In one sense it's discouraging to see the two replacement regressions disagree with the un-tampered model. In another sense, the two replacement regressions are performing a part of their duty that is equally as important as if they had provided support. One cannot ignore the initial regression being vastly superior in terms its goodness of fit as measured by the area under the ROC curve. Diagnostic tests do however hint that we are suffering a missing variable bias, and it's quite feasible that the dramatic loss of significance experienced when we cross from the untouched model to the expected values models is testament to that impurity. Hence, the expected value regressions appear to have severed a most worthwhile purpose indeed.

Table 4.3 Marginal effects on whether a person has considered relocating their labour.

	Regression 2.1	**Regression 2.2 (sample means)**	**Regression 2.3 (counterfactual means**
Dependent variable →	Cease Farm	Cease Farm	Cease Farm
Age	-.007026*	-0.010***	-0.0102***
	(0.00394)	(0.0035)	(0.0035)
Sex	-0.072012	0.10445	0.103316
	(0.10031)	(0.06885)	(0.06879)
Co-Hab	0.08870	0.10183	0.101554
	(0.07227)	(0.0686)	(0.06833)
Personal Education	0.06733**	0.03031	0.03035
	(0.067336)	(0.03292)	(0.0329)
Sick days	0.00662	0.00663	0.00646
	(0.0066)	(0.00442)	(0.0044)
Regular Savings	-0.00486	-0.00212	-0.00159
	(0.0319)	(0.03046)	(0.03032)
Future provision	0.1395614	-0.01896	-0.01186
	(0.08631)	(0.1244)	(0.1227)
Food & Accom	0.0745829	0.00532	0.00674
	(0.08091)	(0.0864)	(0.08688)
Organisational support	-0.15709	-0.0259	-0.10972
	(0.0721)	(0.0610)	(0.0653)
Child mortality	-0.1570**	-0.1049	-0.10972
	(0.066)	(0.0947)	(0.0949)
Income per capita	-0.000048	-0.00002	-0.00002
	(0.00004)	(0.00003)	(0.00003)
Expenditure per capita	0.0006182**	0.00020	0.00018
	(0.00024)	(0.0002)	(0.00021)
Financial Assistance	0.1646126	0.06240	0.06496
	(0.08452)	(0.06752)	(0.06753)
Participation index	-0.0208374	0.01021	-0.00889
	(0.03719)	(0.03287)	(0.0351)
Permanent	0.1318096*	0.02974	0.02545
	(0.07482)	(0.0954)	(0.09541)
Animals	-0.1079453	-0.06988	-0.07616
	(0.07387)	(0.0804)	(0.0795)
Fair-trade	0.21695***	0.04206	0.07802
	(0.06933)	(0.0799)	(0.0900)
n	154	222	222
Area under ROC	0.82	0.7	0.71
Hit	77%	74%	74%

Numbers in parentheses are standard errors
*Significant at the 0.10 level
**Significant at the 0.05 level
*** Significant at the 0.01 level

We are granted findings in which we must concede that our data struggles to offer a clear insight into what factors influence whether a person considers changing their place of work. Consequently we cannot say whether or not fair-trade prevents a person from wanting to move away from the farm they are currently on. The only variable we can have some confidence in is that past the average age, a person's propensity to wish to relocate begins to fall – a finding which most would consider to be quite intuitive. The next relationship to be tested offers a much clearer picture.

4.3.3 Regressions 3.1-3.1: change in wellbeing over the last 3 to 5 years

Attempting to compensate for the absence of a time dimension, the third model takes as its dependent variable 'improvement in living standards over the last 3 to 5 years'. Representative of the period of fair-trade involvement, the recipients where asked if their lives had improved, stayed the same or worsened over that period. The descriptive statistics for this have been presented in the appropriate section above. The answer was then condensed to be a 0 for those who felt their living standard had either worsened or remained stagnant, and a 1 for those who claimed an improved standard of living. Incidentally, this variable was tested as a regressor in the previous specification, but proved to be neither significant nor at all enhancing of the goodness of fit.

Of all three specifications this model grants fair-trade its most decisive compliment. As well, in terms of estimation and counterfactual representation, the model that is reported below was the most accommodating so far. The un-tampered model has a much better fit, and there is very little dispute of significance across all 3 specifications. What this consistency indicates is that when we discuss inference magnitudes, we can, for the most part, focus our discussion on regression 3.1.

The lion's share of upward pressure appears to be generated by two variables; fair-trade and whether the person considers their organisation to be credible in terms of the commitments it makes to them (i.e. general promises that relate to working standards). Highly significant across all specifications, those who called into question their employer's commitment to stand by their stated obligations were 30-35% less likely to have experienced an improvement in living standards over the period in question. This in turn is associated to an odds ratio that lifts the singular odds of citing an improvement by an estimated 579%.

Table 4.4 Marginal effects on whether a person considers their wellbeing to have improved over the last 3 to 5 years.

	Regression 3.1	Regression 3.2 (sample means)	Regression 3.3 (counterfactual means)
Dependent variable →	liv_stand35_01	liv_stand35_01	liv_stand35_01
Age	-0.008016**	-0.00748**	-0.007477**
	(0.0034)	(0.0034)	(0.0034)
Marriage and cohabitation	0.148157*	0.168803**	0.169167**
	(0.0828)	(0.07494)	(0.07484)
Personal Education	-0.01653	-0.03198	-0.03355
	(0.0332)	(0.03278)	(0.0326)
Regular Savings	0.05070	0.029684	0.029150
	(0.03583)	(0.03424)	(0.0341)
Vote	0.020215	0.153120**	0.147714*
	(0.0905)	(0.07679)	(0.07687)
Food & Accom	-0.06631	-0.05224	-0.04856
	(0.06968)	(0.08862)	(0.08839)
Educational support	0.10151	0.144891	0.1595*
	(0.14592)	(0.0890)	(0.08957)
Income per capita	-0.00019*	-0.000080	-0.000082
	(0.00011)	(0.0001)	(0.0001)
Expenditure per capita	0.00056**	0.000205	0.000208
	(0.00028)	(0.0002)	(0.0002)
Financial Assistance	-0.1108	-0.127427*	-0.132520*
	(0.07995)	(0.0715)	(0.07182)
Participation Index	0.01113	-0.008691	-0.00638
	(0.03616)	(0.0331)	(0.0328)
Farm Trust	0.3406***	0.2759***	0.28155***
	(0.10251)	(0.0753)	(0.0750)
Permanent	-0.0335	0.04830	0.04265
	(0.0915)	(0.0910)	(0.0900)
Animals	0.13552**	0.13434*	0.13649*
	(0.0566)	(0.0708)	(0.0701)
Fair trade	0.29486**	0.24019***	0.22374***
	(0.1278)	(0.07317)	(0.07396)
N	155	225	225
Area under ROC	0.86	0.8	0.8
Hit	80%	75%	75%

Numbers in parentheses are standard errors
*Significant at the 0.10 level
**Significant at the 0.05 level
*** Significant at the 0.01 level

More central to the task at hand, all models appear to strongly support the premise that fair-trade has exhibited a strong upward force on people's subjective measure of wellbeing. In terms of fair-trade, we still prefer regression 3.1 because of the superiority

of the area under the ROC curve. However, unlike the organisational commitment variable (Farm Trust), there are no replacements in fair-trade, and so it means that we can also pay attention to the coefficients in regressions 3.2 and 3.3 – we can view them as a sort of range. If a person is a fair-trade worker, there is around a 25% greater chance that they will have cited an improvement in living standards over the period in question. With odds ratios ranging from 3.3 to 5.2, the model predicts that being a member of fair-trade raises the odds of an improvement in living standards by between 232 and 289%.

Summarising the remaining significant variables completes a picture that one may find generally rather intuitive – or at least not counterintuitive. The model suggests a significant but minuscule influence from age. Above the average age, each additional year raises the chances of a person claiming to having experienced an improvement in living standards by around 7 or 8%. With odds ratios ranging from 0.94 to 0.96, this tells a similar story in which getting older is associated with a singular odds decline of 4 to 6%.

The replacement regressions serve a worthwhile purpose in respect of how they tip the cohabitation variable from 90 to 95% significance. Taking that small push into account, we regard the variable as significant, and report that having a partner is associated with around a 15% increase in the likelihood of a person citing a short to medium term improvement in their standard of living. At 2.4 to 2.7, the odds ratios of this variable are more pronounced, the prediction being that if a person acquires a partner the odds of them citing an increase in living standards rises by 143 to 172%.

The relationship with voting activity is difficult to interpret. In the replacement regressions we see it cross the threshold into significance, rise from an upward prediction of 2 to 15%, and at the same time double its odds ratio. Given that there are only 7 replacements of this variable, we may prefer to give a bit more weight to the

replacement regressions; at the least we would cite a positive relationship which is weakly significant.

It is surprising to see income per capita assume a negative value. However, the slightness of its strength, less than a tenth of a percent, coupled with it only meeting the 90% confidence level, and thereafter losing its significance in the replacement regressions dictates that we need not dwell upon it.

Being the recipient of financial assistance generates a negative coefficient and is weakly significance. The variable itself and the relationship it exhibits in this model is neither intuitive nor counterintuitive. The coefficient suggests downward pressure of around 12% in terms of marginal effect, and an odds ratio that cuts in half the odds of a person citing an improved living standard. As there were no replacements, we can look at the negativity and mild level of significance in regressions 3.2 and 3.3 and consider that this variable may add some colour to the overall picture. In terms of piecing together a story, it suggests that the type of financial assistance that workers are making use of is more associated with 'assistance for difficulties' as opposed to 'finance for consumption or development'.

Lastly we must remark upon the positive and mildly significant influence of animal ownership. As no expected values where used within this variable, we would, on balance, prefer the statement of mild significance that is present in regressions 3.2 and 3.3 over the stronger statement that model 3.1 makes, and therefore conclude in favour of a 90% confidence interval. The outcome is that the marginal effect of animal ownership elevates the chance that a person will have neither regressed nor remained stagnant in their standard of living by around 14%. Also, preferring the singular odds ratios from regressions 3.2 and 3.3, we would cite the variable to be worth an odds increase of around 140%.

4.4 CONCLUDING REMARKS

It's interesting to observe that a number of relationships which we expected to stand tall did in the end appear to fall by the wayside. For example 'direct income' appears somewhat less relevant than one may have intuitively expected. The overall picture for fair-trade is one whereby there is a very occasional suggestion of negativity, a fair degree of neutrality, and moderate amount of positive influence.

In terms of material welfare, we have observed that direct income does not appear to be a key feature of this fair-trade story. Descriptive statistics paint a picture in which incomes are equal but the support and assistance that reaches fair-trade farmers is in many cases superior to that which reaches conventional peers.

The portrayal as regards health and education expresses neutrality or else favouritism towards the counterfactual group. Given the time it takes to alter variables of this nature we believe that it is more appropriate to employ many of these variables in a way that establishes a vantage point over initial (past) points of welfare. In this case, we find evidence that provides support for the folk-knowledge that our fair-trade sample was taken from the "dark side of the mountain". If it is indeed the case that fair-trade workers began from a less advantageous position, this would imply that 'neutrality' may itself be indicative of progress. We cannot speculate too heavily on that point but consider it so that the reader is aware of it.

It is something of a surprise to find that fair-trade farmers did not appear any less likely to have considered relocating their labour. Indeed there is even a small indication in the data to suggest that they may be more likely to have considered relocating. Viewed in what many would consider the most apparent light of day, this variable is likely to be taken as a proxy for 'contentment'.

Similarly, but open to a more multidimensional conclusion, fair-trade workers appeared no keener for their children to remain in agriculture than did non fair-trade

workers. The interpretation of this may be deemed to capture a mixture of contentment, expectations, understanding of alternatives, and developmental tides of labour. In addition, the data contains a subtle hint of an adverse affect in which fair-trade farmers may be more likely to succumb to the temptation to withdraw their children during harvest time, but the numbers were too few to model. This however may be worthy of further enquiry.

Our two strongest most robust relate to 'participation' and 'recent improvement in living standards.' In terms of welfare definition, our clearest dependent variable is if a person claims to have experienced an improvement in their living standard over the last 3 to 5 years. Within this model fair-trade shone brightly. Similarly, results relating to 'participation' are particularly benign towards fair-trade. It does indeed appear that fair-trade joint-bodies are substantially more energised than those of non fair-trade farms. Fair-trade workers appear to be more motivated in participating in joint-body activities, and to have more faith in the ability of their joint-bodies to be effective in making a difference. Given that 'empowerment' is cited as a cardinal objective by fair-trade organisers, if one is willing to directly equate participation with empowerment, then the data suggest that fair-trade appears to be clearly achieving one of its cornerstone objectives.

The two main criticisms of this study are that practical limitations prevented the data from being purely randomised. There is however a degree of randomness in the sense that we simply took all we could find and imposed no selection criteria. Secondly, the absence of a time dimension severely hinders the degree of sophistication we can impose upon analysis of the data. The lifetime of fair-trade is only now entering a stage whereby time series and longitudinal analysis present themselves as genuine options. It is without hiding from the spotlight of these criticisms that we present a conclusion which is broadly favourable to fair-trade.

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Conclusion

As regards market behaviour, we grasp in our hands something which is both too hot to hold, and at the same time too valuable and volatile to just drop. The means by which to distribute the stock of an economy rest neither exclusively on the desks of state planners, nor purely in the self-interested hands of the people themselves. It is a joint venture in which each must play their part. Comprehending and designing the specifics of that balance is 'thee' central challenge of political economy. Failing to respect the system of incentives which governs the behaviour of people is one fundamental and time-honoured pitfall. Yet, feeling the answers to be already known, constant, and universal, marks its own pitfall and, at times, cements an avenue of conceit. It is via recognition of the immodesty of the challenge at hand that discussions of intervention are best broken down and examined in small packets as opposed to theories of grand design. Fair-trade is one very small element of 'voluntary orientated' intervention. It is probably more accurate to refer to it as quasi-intervention. It is the guided opinion of this discourse that fair-trade is 'subtle enough' to satisfy those who trust the market more than the planners. To somehow consider it a perversion of liberal values is to show a flair for hyperbole. It has been brought to bear that the structural characteristics of agriculture, the global political impositions on trade, and the clear concentration of power within certain commodity chains, all combine to grant that fair-trade is legitimate 'in principle'. The question of whether its legitimacy extends beyond being simply 'in principle' is one which this thesis has sought to shed some light on. As well as identifying the grounds of principled legitimacy, the first chapter went on to identify a number of gaps. Each gap was tailored to a particular categorical actor in the fair-trade relationship. Exposing three actors in all – the consumer, the non-participating producer, and the participating producer – each subsequent chapter was respectively dedicated to

examining the welfare effects on a particular actor. Accordingly, inclusive of a comprehensive literature review, the contribution of this thesis is four-fold.

As regards the consumer we equated fair-trade with altruism, and constructed a theoretical behavioural framework in which we were able to measure the utility that a fair-trade consumer receives in respect of their purchase. From within that framework, we displayed how the addition of new information can alter a person's 'propensity to experience utility from the benefit of others' and how that in turn affects the consumer's decision to participate in fair-trade. While the generation of new information can be either good or bad for fair-trade, it has in either connotation the potential to be win-win for the consumer. This is because if they felt their purchases to be heralding a positive impact, consumer utilities increase, whereas if they feel their contribution to be ineffectual they could withdraw their patronage and save themselves money. The degree to which the average consumer differentiates between high quality and low quality information is undecided, and that may foster an incentive for fair-trade organisers to concentrate their efforts on the proliferation of anecdotal evidence. In the interests of 'firmer justice' however, the policy call has to be for more systematic studies with carefully identified counterfactual groups. By virtue of it being voluntary behaviour, there is no liberal case to oppose the presence of fair-trade in respect of the consumer. Fair-trade either lifts the utility of the consumer or else the consumer does not partake. As an extension of the framework it was hypothesised that being able to measure a person's income independent propensity to experience utility from other persons' gains could possibly be used to shed some quantitative light on what a 'social consensus' is, and the wider role it plays in terms of growth and development.

Chapter II deployed the tools of a classical welfare approach in analysing transfers of income between participating and non-participating producers. We were critical of precisely what constitutes 'oversupply', and cast doubt upon the ease with which some

commentators feel they can 'with ease' identify it. As a point of theoretical generosity, we took at face value the assertion that by permitting normal market forces to play their role, fair-trade does not beget oversupply. The result was a model that appropriated fair-trade as a change in preference rather than a change in demand, hence we held physical supply and demand constant, but permitted incomes to rise – zero-sum in quantity, non zero-sum in income. The model is limited in that it only looks at fair-trade as a price increase, but it does nonetheless paint a very logical picture, and as such grants the policymaker a unique overview of the process. We are able to show an array of perceivable welfare shuffles, inclusive in which were the necessary and sufficient, and necessary but not sufficient conditions needed in order for fair-trade to be a Pareto improvement. Uncovered was the possibility of an adverse effect, one in which, under certain conditions, fair-trade damaged the income of the fair-trade farmer, and increased the income of the non-participating producer. The transfer was however zero-sum and so this, quite interestingly, implies that if one is willing to accept that the non-participants quite feasibly start from equally disadvantaged circumstances, then the patron's willingness to support fair-trade need not be affected. While there is some debate around how one may qualitatively comprehend some key variables, the diagnosis of this thesis is that the policymaker is largely forced to take a back seat to the animal spirits of actors, and various other market forces both random and non-random.

Finally, an original dataset of landless South African grape pickers was examined for evidence of impact. With a few notable exceptions and points of debate, the overall results reflected reasonably well on fair-trade. We observed a number of points of neutrality, but at the same time brought forth some local knowledge and evidence which suggested that neutrality may be representative of catch-up. Somewhat surprisingly, we did not observe that fair-trade made people more likely to remain with their current employer, nor did it appear to persuade people that agriculture is an especially

preferable destination for their children. One the one hand this could be indicative of fair-trade not making people feel any more content, on the other it suggests that fair-trade does not alter what some would consider to be a 'natural developmental tide' in respect of labour movement. The strongest and most significant results came in relation to subjective improvements in living standards and activities of participation.

The overall conclusion is that fair-trade appears to do more good than bad, it may not be a panacea for problems of disadvantaged commodity producers, but it does appear to have the potential to smooth the edges of the lives of the people that it targets. Various predispositions will likely dictate that there will always be those one either side of the divide; those that consider fair-trade universally good, and those that consider fair-trade universally unhelpful. Evaluation is desperately in need of a time dimension, but as things stand the arsenal of the advocates is better stocked than the armoury of the critics.

References

Akerlof, G. A. (2006). Explorations in pragmatic economics : selected papers of George A. Akerlof (and co-authors.). New Delhi, Oxford University Press.

Akerlof, G. A. and R. J. Shiller (2009). Animal spirits : how human psychology drives the economy, and why it matters for global capitalism. Princeton, N.J., Princeton University Press.

Amsden, A. H. (1989). Asia's next giant: South Korea and late industrialization. New York, Oxford University Press.

Angrist, J. D. and W. N. Evans (1998). "Children and Their Parents' Labor Supply: Evidence from Exogenous Variation in Family Size." The American Economic Review 88(3): 450-477.

Appleyard, D., A. Field, et al. (2006). International Economics, McGraw-Hill Irwin.

Aranda, J. and C. Morales (2002). Poverty Alleviation through Participation in Fair Trade Coffee Networks: The Case of CEPCO, Oaxaca, Mexico, Colorado State University.

Ariely, D. (2008). Predictably irrational: the hidden forces that shape our decisions. London, HarperCollins.

Arrow, K. J. and Yale University. Cowles Foundation for Research in Economics. (1951). Social choice and individual values. London, Chapman & Hall.

Aumann, R. J. (1995), Backward Induction and Common Knowledge of Rationality, Games and Economic Behavior 8, 6–19.

Aumann, R. and M. Maschler (1995). Repeated Games with Incomplete Information, MIT Press, Cambridge.

Aumann, R. and L. Shapley. (1976). "Term Competition: A Game-Theoretical Analysis."

Axelrod, R. and W. Hamilton (1981). "The Evolution of Cooperation." Science 211(4489): 1390-1396.

Bacon, C. (2005). "Confronting the coffee crisis: can fair trade, organic, and specialty coffees reduce small-scale farmer vulnerability in northern Nicaragua?" World Development 33(3): 497-511.

Barratt Brown, M. (1993). Fair trade : Reforming the international trading system. London; New Jersey, Zed Books.

Baumol, W. (1986). Superfairness Application + Theory. Cambridge, Massachusetts, MIT Press.

Becchetti, L. and S. Castriota (2006). "Is Fair trade Honey Sweeter? An empirical analysis on the effect of affiliation on productivity." Ecineq **WP104**.

Becchetti, L. and M. Costantino (2008). "The effects of Fair Trade on marginalised producers: an impact analysis on Kenyan farmers." World Development **36**(5): 823-842.

Becchetti, L. and F. C. Rosati (2007). "Global social preferences and the demand for socially responsible products: empirical evidence from a pilot study of fair-trade consumers." world economy **30**(5): 807-36.

Becker, G. (1974). "A Theory of Social Interactions." The Journal of Political Economy **82**(6): 1063-1093.

Becker, G. (1976). "Altruism, Egoism, and Genetic Fitness: Economics and Sociobiology." journal of Economic Literature **14**(817-826).

Becker, G. (1981). "Altruism in the Family and Selfishness in the Market Place." Economica **48**(189): 1-15.

Becker, G. S. (1965). "A Theory of the Allocation of Time." The Economic Journal **75**(299): 493-517.

Becker, G. S. and H. G. Lewis (1973). "On the Interaction between the Quantity and Quality of Children." The Journal of Political Economy **81**(2): S279-S288.

Beinhocker, E. (2006). The Origin Of Wealth, Harvard Business School Press.

Bentham, J. and J. Bowring (2001). The works of Jeremy Bentham. Adamant Media ,.

Bentham, J., T. L. S. Sprigge, et al. (1968). The correspondence of Jeremy Bentham. London, Athlone.

Bergstrom, T. (1989). "Puzzles: Love and Spaghetti, The Opportunity Cost of Virtue." Journal of Economic Perspectives **3**: 165-173.

Bergstrom, T. and O. Stark (1993). "How Altruism Can Prevail in an Evolutionary Environment." American Economic Review **83**(2): 149-155.

Berkowitz, L. and R. Goranson (1966). "Reciprocity and Responsibility Reactions to Prior Help." Journal of Personality and Social Psychology **3**: 227-32.

Berlan, A. (2006). Keeping Cocoa Clean: An anthropological Review of the Chocolate Industry's Strategies for Poverty Reduction and ethical Supply Chain Management. DSA Annual Conference. University of Reading.

Berndt, C. E. H. (2007). Does fair trade coffee help the poor: Evidence from Costa Rica and Guatemala. Mercatus Policy series. V. George Mason University. **Policy comment 11**.

Bernheim, B., A. Shleifer, et al. (1985). "The Strategic Bequest Motive." <u>The Journal of Political Economy</u> **93**(6): 1045-1076.

Bhagwati, J. N. and Wincott Foundation. (1995). <u>Free trade, "fairness" and the new protectionism: reflections on an agenda for the World Trade Organisation: twenty-fourth Wincott Memorial Lecture delivered at Bishop Partridge Hall, Church House, Westminster, Tuesday, 25 October 1994</u>. London, Institute of Economic Affairs for the Wincott Foundation.

Binmore, K. G. (1992). <u>Fun and games</u>. Lexington, Mass., D.C. Heath.

Binmore, K. G. (1994). <u>Game theory and the social contract</u>. Cambridge, Mass. ; London, The MIT Press.

Binmore, K. G. (1995). <u>Backward induction and rationality</u>. London, University College London Department of Economics.

Binmore, K. G. (2005). <u>Natural justice</u>. Oxford, Oxford University Press.

Binmore, K. G. (2007). <u>Playing for real: a text on game theory</u>. Oxford, Oxford University Press.

Binmore, K. G., A. Shaked, et al. (1984). <u>Fairness or gamesmanship in bargaining? : An experimental study</u>, London School of Economics and Political Science International Centre for Economics and Related Disciplines.

Bird, K. and D. Hughes (1997). "Ethical consumerism: the case of "fair trade" coffee." <u>Business Ethics: A European Review </u>**6**(3): 159-67.

Blowfield, M. and S. Gallet (2001). Volta River Estates Fairtrade Bananas case study. <u>Ethical Trade and Sustainable rural Livelihoods –Case Studies</u>, NRI & NERT.

Blundell, R. and M. C. Dias (2002). Alternative Approaches to Evaluation in Empirical
Microeconomics. <u>cemmap working paper</u>. London, The Institute of Fiscal studies Departmnet of Economics UCL.

Booth, P. (2004). "Is trade Justice Just? Is Fair Trade Fair " <u>IED Discussion Paper 10</u>.

Booth, P. (2008), 'The economics of Fairtrade: a Christian perspective', http://www.iea.org.uk.

Booth, P. and L. Whetstone (2007). "Half a cheer for Fair Trade." <u>Economic Affairs</u> **27**(2): 22-30.

Bourdieu, P. (1984). <u>Distinction: a social critique of the judgement of taste</u>. London, Routledge & Kegan Paul.

Boyd, R. and R. McElreath (2007). <u>Mathematical Models of Social Evolution: A guide for the perplexed</u>, Chicago: Univ of Chicago Press.

Bresnahan, T. (1981). "Departures from Marginal Cost Pricing in the American automobile Industry." Journal of Econometrics **17**: p201-27.

Bresnahan, T. (1982). "The Oligopoly Solution." Economic Letters **10**: 87-92.

Brown, M. B. (1993). Fair Trade: Reform and Realities in the international trading system. London, Zed Books.

Bruce, N. and M. Waldman "The Rotten-Kid Theorem Meets the Samaritan's Dilemma." The Quarterly Journal of Economics **105**(1): 155-156.

Bruntland, G., Ed. (1987). Our common future: The World Commission on Environment and Development, UN.

Buchanan, J. M. and G. Tullock (1962). The calculus of consent : logical foundations of constitutional democracy. Ann Arbor, University of Michingan Press.

Bureau, J. C., S. Jean, et al. (2006). "The consequences of agricultural trade liberalization for developing countries: distinguishing between genuine benefits and false hopes." World Trade Review **5**(2): 225-49.

Buss, D. M. (1999). Evolutionary psychology : the new science of the mind. Boston, Allyn and Bacon.

Buss, D. M. (2005). The handbook of evolutionary psychology. Hoboken, N.J., John Wiley & Sons.

Castro, J., E. (2001). Impact assessment of Oxfam's Fair Trade activities the case of Productores de mile Flor de Campanella, OXFAM.

Chang, H.-J. (2002). Kicking away the ladder? economic development in historical perspective. London, Anthem.

Coase, R. H. (1994). Essays on economics and economists. Chicago, University of Chicago Press.

Coates, D., J. C. Heckelman, et al. (2003). Collective choice : essays in honor of Mancur Olson. Berlin, Springer.

Collier, P. (2008). The bottom billion: why the poorest countries are falling and what can be done about it. Oxford, Oxford University Press.

Colman, D. and T. Young (1988). Principles of agricultural economics : markets and prices in less developed countries. Cambridge, Cambridge University Press.

Conroy, M. E. (2001). "Can Advocacy-led certification systems transform global corporate practices? Evidence and some theory " Working Paper no.21.

Cox, D. and O. Stark (1994). "Intergenerational Transfers and the Demonstration Effect." Working Paper Harvard University.

Cox, N. R. (1974). "Estimation of the correlation between a Continuous and a Discrete Variable." Biometrics **30**(1): 171-178.

Creyer, E. H. and T. Ross (1997). "The influence of firm behavior on purchase intention: do consumers really care about business ethics?" Journal of Consumer Marketing **14**(6): 421-32.

Dasgupta, P. and E. Maskin (2004). "Is Majority Rule the Best Voting Method? (Published as "The Fairest Vote of All")." Scientific American **290**(3).

Dawes, R., M. and R. Thaler (1988). "Anomalies: Cooperation." Journal of Economic Perspectives **2**(3): 187-197.

Dawkins, R. (1979). "Twelve Misunderstandings of Kin Selection." Z. Tierpsychol **51**.

Dawkins, R. (1989). The selfish gene, Oxford University Press.

de Quervain, D. J. F., U. Fischbacher, et al. (2004). "The Neural Basis of Altruistic Punishment." Science **305**(5688): 1254-1258.

De Soto, H. (2000) The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else. New York, Basic Books.

De Vroey, M. (2006a). "Lucas and Involuntary unemployment: A reply to Hayes." Cambridge Journal of Economics **30**.

Deininger, K. (1993). Cooperatives and the break up of large mechanized farms: theoretical perspectives and empirical evidence. Washington, D.C., World Bank.

Deininger, K. (1995): 'Collective Agricultural Production: A Solution for Transition Economies?' World Development, Vol. 23, No 8

Diamond, J. M. (2005). Guns, germs, and steel : the fates of human societies. New York, Norton.

Diamond, J. M. (2006). Collapse : how societies choose to fail or survive. London, Penguin.

Dosman, E. J. (2008). The life and times of Raúl Prebisch, 1901-1986. Montreal, McGill-Queen's University Press.

Duflo, E., Glennerster, R., Kremer, M. (2006). Using Ramdomization in Development Economics Research: A Toolkit. Technical Working Paper Series. Cambridge, Massachusetts, National Bureau of Economic Research.

Easterly, W. R. (2001). The elusive quest for growth : economists' adventures and misadventures in the tropics. Cambridge, Mass., MIT Press.

Economist (2006). Voting With Your Trolly. The Economist
London.

Economist (2007). Excellence in a cup.

EFTA (2001). Challenges of Fair trade 2001-2003. Fair Trade Yearbook 2001, European Fair Trade Association.

Ellis, K. and J. Keane (2008). A review of ethical standards and labels: is there a gap in the market for a new "good for development" Label? London, Overseas Development Institute.

Epstein, J. M., R. Axtell, et al. (1996). Growing artificial societies : social science from the bottom up. Washington, D.C, Brookings Institution Press.

Fehr, E. and S. Gachter (2000). "Fairness and Retaliation: The economics of Reciprocity." Journal of Economic Perspectives **14**(3): 159-181.

Fehr, E. and S. Gächter (2000). "Cooperation and Punishment in Public Goods Experiments." The American Economic Review **90**(4): 980-994.

Fehr, E., G. Kirchstereiger, et al. (1993). "Does fairness prevent Market Clearing? An experimental Investigation." The Quarterly Journal of Economics **108**(2): 437-495.

Fehr, E. and K. Schmidt (2001). Theories of Fairness and Reciprocity - Evidence and Economic applications, Institute for Empirical Research in Economics University of Zurich.

Fehr, E., K. M. Schmidt, et al. (1998). A theory of fairness, competition and cooperation. London, Centre for Economic Policy Research.

Ferguson, N. (2008). The ascent of money: a financial history of the world. New York, Penguin Press.

FLO (2005). FLO Annual report, Fairtrade Labeling Organisations International.

FLO (2006). FLO Annual report, Fairtrade Labeling Organisations International.

FLO (2007). FLO Annual Report, Fairtrade Labeling Organisations International.

FLO (2008). FLO Annual Report, Fairtrade Labeling Organisations International.

FLO (2009). FLO Annual Report, Fairtrade Labeling Organisations International.

FLO (2010). FLO Annual Report, Fairtrade Labeling Organisations International.

FLO (June 2004). Fairtrade Bananas Impact Study: Dominica, Winward Islands.

FLO-CERT GmbH. Independent International Certification company
http://www.flo-cert.net/flo-cert/main.php?lv=3&p=1&p3=6
http://en.wikipedia.org/wiki/FLO-Cert

Franciosi, R., P. Kujal, et al. (1995). "Fairness: Effect on Temporary and Equilibrium Prices in Posted-Offer Markets." The Economic Journal **105**(413): 938-950.

Frank, A. G. (1998). ReOrient : global economy in the Asian Age. Berkeley, London, University of California Press.

Frank, R. (1987). "If Homo Economicus Could Choose His Own Utility Function, Would He Want
One with a Conscience?" American Economic Review **77**(4): 593-604.

Frank, R. (1988). Passions Within Reason. New York, Norton.

Friedman, J. W. (1990). Game theory with applications to economics. Oxford, Oxford University Press.

Friedman, M. (1953). Essays in positive economics, Chicago U.P.; Cambridge U.P.

Friedman, M. (1957). A Theory of the Consumption Function. N.J, Princeton University Press.

Friedman, M. (1962). Capitalism and freedom. [Chicago], University of Chicago Press.

Friedman, M. and A. J. Schwartz (1963). A monetary history of the United States 1867-1960. Princeton, Princeton University Press.

Friedman, M. (2002) "Capitalism and Freedom" Chicago: University of Chicago Press.

Fudenberg, D. and E. Maskin (1986). "The Folk Theorem in Repeated Games with Discounting or with Incomplete Information." Econometrica **54**(3): 533-554.

Fudenberg, D. and E. Maskin (1990). "Evolution and Cooperation in Noisy Repeated Games." The American Economic Review **80**(2): 274-279.

Fujita, M., P. R. Krugman, et al. (1999). The spatial economy : cities, regions and international trade. Cambridge, Mass., MIT Press.

Fukuyama, F. (1992). The End of History and The Last Man. London, Hamish Hamilton.

Furubotn, Eirik G. (1976): 'The long run analysis of the labor-managed firm: An alternative interpretation', *American Economic Review*, Vol. 66 No 1.

Galbraith, J. K. (1975). The great crash, 1929. London, Penguin.

Galbraith, J. K. (1977). The affluent society. London, Deutsch.

Ghiselin, M. (1974). The Economy of Nature and The Evolution of Sex. Berkeley, University of California Press.

Gibbons, R. (1992). A Primer in Game Theory, Simon & Schuster International.

Giovannucci, D. and F. Koekoek (2003). The State of Sustainable Coffee: A study of twelve major markets.

González-Cabañas, A. (2002). Evaluation of the current and potential poverty alleviation benefits of participation in the fair trade market: The case of Union La selva, Chipas Mexico, Colorado State University Fair Trade Research Group Report.

Grauwe, P. d. (2005). Exchange rate economics : where do we stand? Cambridge, Mass., MIT Press.

Grauwe, P. d. and M. Grimaldi (2006). The exchange rate in a behavioral finance framework. Princeton, N.J., Princeton University Press.

Greenberg, J. (1978). "Effects of Reward Value and Retaliative Power on Allocation Decisions: Justice Generosity or Greed?" Journal of Personality and Social Psychology 36: 367-379.

Guth, W., R. Schmittberger, et al. (1982). "An Experimental Analysis of Ultimatum Bargaining." Journal of Economic Behavior and Organization 3: 367-88.

Haight, C. and D. R. Henderson (2010), "Fair trade is counterproductive and unfair: a rejoinder", Economic Affairs, 30(1): 88–91.

Hamilton, W. (1964). "The genetical evolution of social behaviour I and II." Journal of Theoretical Biology (7): 1-16 and 17-52.

Hamilton, W. D. (1963). "The Evolution of Altruistic Behavior." The American Naturalist 97(896): 354-356.

Hamilton, W. D. (1995). Narrow Roads of Gene Land: The Collected Papers of W. D. Hamilton Oxford, Oxford University Press.

Harsanyi, J. C. (1976). Essays on ethics, social behavior, and scientific explanation. Dordrecht [Netherlands] ; Boston, Reidel.

Hart, M. and Centre for Trade Policy and Law (1996). A question of fairness : the global trade regime, labour standards, and the contestability of markets. Monterey, Centre for Trade Policy and Law.

Hausman, D. and M. McPherson (1993). "Taking Ethics Seriously: Economics and Contemporary Moral Philosophy." Journal of Economic Literature 31(2): 671-731.

Hayek, F. A. (1976). Law, Legislation and Liberty, A new statement of the liberal principles of justice and political economy. London, Routledge

Hayek, F. A. v. (1944). <u>The road to serfdom</u>. Chicago, University of Chicago Press.

Hayes, M. (2004). "Strategic Management Implication of the ethical consumer." <u>http://www.fairtraderesearch.org</u>.

Hayes, M. and Moore, G. (2005) "The economics of fair-trade: a guide in plain English". http://www.udbs.dur.ac.uk/fairtraderesearch

Hayes, M. (2006). "On the efficiency of Fair Trade." <u>Review of Social Economy</u> **64**(4): 447 – 468.

Hayes, M. (2006a). "Comment: Lucas on Involuntary Unemployment." <u>Cambridge Journal of Economics</u> **30**: 473-477.

Hegel, G. W. F. (1900). <u>The philosophy of history</u>. New York, Willey.

Heilbroner, R. L. (1983). <u>The worldly philosophers : the lives, times, and ideas of the great economic thinkers</u>. Harmondsworth, Penguin.

Helmberger, P. G. (1964). "Cooperative Enterprise as a Structural Dimension of Farm Markets." <u>Journal of Farm Economics</u>.

Helmberger, P. G., S. Hoos, et al. (1965). <u>Cooperative bargaining in agriculture: grower-processor markets for fruits and vegetables</u>. [Berkeley], University of California.

Henderson, D. R. (2008). "Fair Trade is counterproductive and unfair." <u>Economic Affairs</u> **28**(3): 62-4.

Hicks, J. R. (1939). "Foundations of Welfare Economics." <u>Economic Journal</u> **36**(48): 696-712.

Hicks, J. R. (1940). "The Value of Social Income." <u>Econometrica</u> **7**(26).

Hirschleifer, J. (1977). "Shakespeare vs. Becker on Altruism: The Importance of Having the Last Word." <u>Journal of Economic Literature</u> **15**(2).

Hirschleifer, J. (1985). "The Expanding Domain of Economics." <u>American Economic Review</u> **75**(6): 53-70.

Hopkins, R. (2000). Impact Assessment study of Oxfam Fair Trade Oxfam.

Howley, K. (2006), 'Absolution in your cup' http://www.reason.com.

Hume, D. (1739). <u>A treatise of human nature : being an attempt to introduce the experimental method of reasoning into moral subjects</u>. London, Printed for John Noon ...

Hume, D. (1741). <u>Of the Independency of Parliament in Essays: moral, political and literary</u>. Oxford, Oxford University Press (1963).

Hume, D., J. M. Keynes, et al. (1938). <u>An abstract of a treatise of human nature, 1740 : a pamphlet hitherto unknown</u>. Cambridge, University Press.

Imhof, S. and A. Lee (2007). Assessing The Potential of Fair Trade for Poverty Reduction and Conflict Prevention: A Case Study of Bolivian Coffee, Swisspeace and The University of Basel.

Ishikawa, T. (1975). "Family Structures and Family Values in the Theory of Income Distribution." <u>The Journal of Political Economy</u> **83**(5): 987-1008.

Kahneman, D., E. Diener, et al. (1999). <u>Well-being : the foundations of hedonic psychology</u>. New York, Russell Sage Foundation.

Kahneman, D., J. Knetsch, et al. (1986a). "Fairness and the Assumptions of Economics." <u>The Journal of Business</u> **59**(4): 285-300.

Kahneman, D., J. Knetsch, et al. (1986b). "Fairness as a Constraint on Profit Seeking: Entitlements in the Market." <u>American Economic Review</u> **76**(4): 728 - 741.

Kahneman, D., P. Slovic, et al. (1982). <u>Judgment under uncertainty : heuristics and biases</u>. Cambridge, Cambridge University Press.

Kahneman, D. and A. Tversky (1979). "Prospect Theory: An Analysis of Decision under Risk." <u>Econometrica</u> **47**(2): 263-292.

Kahneman, D., A. Tversky, et al. (2000). <u>Choices, values, and frames</u>. Cambridge, New York : Cambridge University Press ; Russell Sage Foundation.

Kaldor, N. (1939). "Welfare Propositions in Economics." <u>Economic Journal</u> **XLIX**(2).

Kaplow, L. and S. Shavell (2002). <u>Fairness versus welfare</u>. Cambridge, MA, Harvard University Press.

Karp, L. and J. Perloff (1993). "A Dynamic Model of Oligopoly in the Coffee Export Market." <u>American Journal of Agricultural Economics</u> **75**: 448-457.

Keynes, J. M. (1921). <u>A treatise on probability</u>. London, Macmillan.

Keynes, J. M. (1926). <u>The end of laissez-faire</u>. London, Hogarth Press.

Keynes, J. M. (1935). <u>A treatise on money</u>. London, Macmillan.

Keynes, J. M. (1936). <u>The general theory of employment interest and money</u>. London, Macmillan and Co.

Keynes, J. M. ((1973)). <u>The Collected Writings</u> London, Macmillan.

Keynes, J. M., D. E. Moggridge, et al. (1980). <u>The collected writings of John Maynard Keynes. Vol.26, Activities 1941-1946 : shaping the post-war world,</u>

Bretton Woods and reparations. London, Macmillan for the Royal Economic Society.

King, M.C. and A.C. **Wilson** (**1975**). Evolution at two levels in Humans and Chimpanzees. Science 188: 107-116.

Kitching, G. (1982). Development and underdevelopment in historical perspective. London, Methuen.

Kohler, P. (2006). "The Economics of Fair trade: for whose benifit? an investigation into the limits of Fair Trade as a development tool and the risk of clean-washing." HEI working Papers 06-2007.

Konow, J. (2003). "Which is the fairest one of all? A positive analysis of Justice Theories." Journal of Economic Literature **41**(4): 1188-1239.

Krugman, P. R. (1990). The age of diminished expectations : U.S. economic policy in the 1990s. Cambridge,Mass., MIT Press.

Landes, D. S. (1966). The Rise of capitalism. New York, Macmillan : Collier-Macmillan.

Landes, D. S. (1999). The wealth and poverty of nations : why some are so rich and some so poor. London, Abacus.

LeClair, M. (2002). "Fighting the tide: alternative trade organizations in the era of global free trade." World Development **30**(6): 949-58.

Leibenstein, H. (1982). "The prisoners' dilemma in the invisible hand: an analysis of intrafirm productivity." American Economic Review **72**(2): 92-97.

LeVay, C. (1983): 'Agricultural cooperative theory: a review', Journal of Agricultural Economics, Vol. 34, No 1

Leventhal, G. and D. Anderson (1970). "Equilibrium Refinements in Psychological Games." Journal of Personality and Social Psychology **15**: 57-62.

Lewin, B., D. Giovannuci, et al. (2004). "Coffee Markets: New Pradigms in Global Supply and Demand." World Bank Agriculture and Rural Development Discussion Paper 3.

Lewis, A. B., R. W. Phillips, et al. (1950). Essential steps in national agricultural improvement. Washington,.

Lewis, W. A. (1954). Economic development with unlimited supplies of labour, The Manchester School.

Lima, S. (1989). "Iterated Prisoner's Dilemma: An Approach to Evolutionarily Stable Cooperation." The American Naturalist, **134**(5): 828-834.

Lindsey, B. (2004). Grounds for complaint? fair trade and the coffee crisis. London Adam Smith Institute (London) also published by CATO Institute (USA).

Littrell, M., A. and M. Dickson, A. (1998). "Fairtrade performance in a competitive market." Clothing and Textiles Research Journal **16**(4): 176-189.

Lowenstein, R. (2001). When genius failed : the rise and fall of Long-Term Capital Management. London, Fourth Estate.

Lucas, J. R. E. (1976). "Econometric policy evaluation: A critique." Carnegie-Rochester Conference Series on Public Policy **1**: 19-46.

Lucas, R. (1978). "Asset Prices in an Exchange Economy." Econometrica **46**: 1429-1445.

Lucas, R. and O. Stark (1985). "Motivations to Remit: Evidence from Botswana." The Journal of Political Economy **93**(5): 901-918.

Lutz, M. G. (*1999*), "A General Test of the *Prebisch–Singer* Hypothesis". Review of Development Economics, 3: 44–57

Lyon, S. (2006). "Evaluating Fair Trade Consumption: Politics, Defetishization and Producer Paricipation." International Journal of consumer Studies **30**(5): 452-464.

Lyon, S. (2007). "Fair Trade cofee and human rights in guatemala." J.Consum. Policy 30: 241-261.

Maddala, G. S. (1983). Limited-Dependent and Qualitative Xariables in Econometrics, Cambbridge University Press.

Malins, A. and V. Nelson (DRAFT). Farmers Fair Trade (Uganda) Ltd, Organic cotton Trade Case Study. Ethical Trade and Sustainable Rural Livelihoods - Case Studies, National Resources Institute, The University of Greenwich.

Mankiw, N. G. (2004). Principles of macroeconomics. Mason, Ohio, Thomson/South-Western.

Marcuse, H. (1955). Eros and civilization : a philosophical inquiry into Freud. Boston, [Mass.], Beacon Press.

Marcuse, H. (1964). One dimensional man : studies in the ideology of advanced industrial society. London, Routledge & K.Paul.

Marcuse, H. (1969). An essay on liberation. London, Allen Lane.

Marcuse, H. (1971). Soviet Marxism : a critical analysis. Harmondsworth, Penguin.

Marx, K. (1886). Wage-labour and capital. London,.

Marx, K. and F. Engels (1975). Collected works. London, Lawrence & Wishart.

Marx, K., F. Engels, et al. (1971). <u>Writings on the Paris Commune</u>. New York ; London, Monthly Review Press.

Marx, K., F. Engels, et al. (1953). <u>Marx and Engels on Malthus : selections from the writings of Marx and Engels dealing with the theories of Thomas Robert Malthus</u>. London, Lawrence & Wishart.

Marx, K. and R. Simpson (1969). <u>Theories of surplus value Part 2</u>. London, Lawrence & Wishart.

Maseland, R. and A. De Vaal (2002). "How Fair is Fair Trade." <u>De Economist</u> **150**(3): 251-272.

Matthews, R. (1984). "Darwinism and Economic Change." <u>Oxford Economic Papers</u> **36**: pp. 91-117.

Matthias, G. L. (1999). "A General Test of the Prebisch–Singer Hypothesis." <u>Review of Development Economics</u> **3**(1): 44-57.

Maynard Smith, J. and Price, G.R. (1973). "The Logic of Animal Conflict". *Nature* **246**, 15-18.

Maynard Smith, J. (1982). "Evolution and the Theory of Games". Cambridge, Cambridge University Press.

McCargo, D (***2004***) "Rethinking ***Vietnam"***, Routledge

Mendoza, R. and J. Bastiaensen (2003). "Fair Trade and the coffee crisis in the Nicaraguan Segovias." <u>Small Enterprise Development</u> **14**(2): 36-46.

Metcalfe, S., J. Foster, et al. (2006). "Adaptive economic growth." <u>Cambridge Journal of Economics</u> **30**: 7-32.

Milford, A. (2004). Coffee, Co-operatives and Competition: The Impact of Fair Trade. Bergen, Norway, Chr. Michelsen Institute of Development Studies and Human Rights.

Mill, J. S., J. Bentham, et al. (1987). <u>Utilitarianism and other essays</u>. Harmondsworth, Middlesex, England, New York, N.Y., U.S.A, Penguin Books.

Mill, J. S., M. Warnock, et al. (1962). <u>Utilitarianism : On liberty. Essay on Bentham. Together with selected writings of Jeremy Bentham and John Austin</u>. London, Collins.

Mohan, S. (2007). "Reforming agricultural trade among developing countries." <u>world Trade Review</u> **6**(3): 397-411.

Mohan, S. (2010). Fair Trade without the froth. London, Institute of Economic Affairs.

Moore, G. (2004). "Fair Trade Movement: Parameters, Issues and Future Research." <u>Journal of Bussiness Ethics</u> **53**: 73-86.

Murray, D., L. Raynolds, et al. (2006). "The future of Fair Trade coffee: dilemmas facing Latin america's small scale producers." Development in Practice **16**.

Nedelcu, A. and R. Michod (2006). "The Evolutionary Origin of an Altruistic Gene." Molecular Biology and Evolution **23**(8): 1460-1464.

Nelson, V. and M. Galvez (2000). Social Impact of Ethical and Conventional Cocoa Trading on the forest-Dependent People in Ecuador, Natural Resources Institute University of Greenwich.

Nelson, V. and Pound, B (2011) "A review of the Impact of Fairtrade Over the Last 10 Ten Years" Natural Resources Institute, University of Greenwich. http://www.fairtrade.org.uk/includes/documents/cm_docs/2011/f/ft_lit_review_briefing_paper_final.pdf

Nelson, V., A. Tallontire, et al. (2002). "Assessing the benefits of ethical trade schemes for forest dependent people: a comprehensive experience from Peru and Equador." International Forestry Review **4**(2): 99-109.

Nerlove, M. (1958). The dynamics of supply : estimation of farmers' response to price.

Nerlove, M. (2002). Essays in panel data econometrics. Cambridge, Cambridge University Press.

Ng, Y.-K. (2004). Welfare Economics: Towards a More Complete Analysis. NY, Palgrave Macmillan.

Nicholls and C. Opal (2005). Fair trade: Market-Driven Ethical Consumption. London, Sage.

ODI (2008). How do ethical and fair trade schemes affect producers? do we need a "good for development label"? London, Overseas Development Institute.

Okun, A. (1981). Prices and Quantities: a Macroeconomic Analysis. Washington, The Brookings Institution.

Olson, M. (1965). The logic of collective action : public goods and the theory of groups, Harvard U.P.; Oxford U.P.

Olson, M. (2000). Power and prosperity : outgrowing communist and capitalist dictatorships. New York, Basic Books.

Olson, M. and S. Kähkönen (2000). A Not-so-dismal science : a broader view of economies and societies. New York, Oxford University Press.

OPM (2000). Fair Trade: Overview, Impact, Challenges: study to inform DIFID's support to Fair trade, Oxford Policy Management.

Pariente, W. (2000). The Impact of Fair Trade on a coffee cooperative in Costa Rica. A Producers Behaviour Approach Universite Paris I Pantheon Sorbonne.

Pelsmaker, P. D. and W. Jansens ((2006)). "A model for Fair Trade buying behaviour: the role of perceived quantity and quality of information and of product-spicific attitudes." Journal of Bussiness Ethics **75**: 361-80.

Pelupessy, W. (2001). Market Failures in Global Coffee Chains. The Future of Pernnial Corps. Yamoussukro, Ivory Coast.

Pérezgrovas, V. and E. Cervantes (2002). Poverty Alleviation through Participation in Fair Trade Coffee Networks: The Case of Unión Majomut, Chiapas, Mexico, Colorado State University Fair Trade Research Group.

Pierre, K. (2007). The Economics of Fair Trade Coffee For Whose Benefit: An Investigation into the Limits of Fair Trade as a Development Tool and the Risk of Clean-Washing. HEI working Paper No: 06.2007. Geneva, Graduate Institute of International Studies.

Pigou, A. (1932). Economics of Welfare. London, Macmillion.

Poe, K. and S. Kyle (2006). Fair Trade - is it really better for workers? A case study of Kaisa Grass Baskets in Bangladesh. NYC, Department of Applied Economics and Management Cornell University.

Ponte, S. (2001). The Latte Revolution? Winners and Losers in the Restructuring of the Global Coffee Market Chain. CDR Working Paper 01.3. Copenhagen, Centre For Development Research.

Popper, K. R. (1952). The open society and its enemies. London, Routledge and Kegan Paul.

Porter, P. and G. Scully (1987). "Economic efficiency in cooperatives." Journal of Law and Economics **30**: 409-512.

Prebisch, R. (1950). The economic development of Latin America and its principal problems. New York, United Nations Department of Economic Affairs United Nations. Economic Commission for Latin, America.

Price, G. (1970). "Selection and covariance." Nature **227**.

Price, G. (1972). "Extension of covariance selection mathematics." Annals of Human Genetics **35**.

Rabin, M. (1993). "Incorporating Fairness into Game Theory and Economics." American Economic Review **83**(5): 1281-1302.

Rawls, J. (1971). A Theory of Justice. Cambridge, Harvard University Press.

Rawls, J. and E. Kelly (2001). Justice as fairness : a restatement. Cambridge, MA, The Belknap Press of Harvard University Press.

Raynolds, L. (2002). Poverty Alleviation Through Participation in Fair Trade Coffee Networks: Existing Research and Critical Issues. <u>Background Paper Prepared for the Project Funded by the Community Resource Development Program</u>. New York, The Ford Foundation.

Raynolds, L., D. Murray, et al. (2004). "Fair trade coffee: building producer capacity via global networks " <u>Journal of International Development</u> **16**.

Redfern, A. and P. Snedker (2002). Creating Market Opportunities for Small Enterprises: . <u>SEED working Paper No. 30</u>, International Labour Organization.

Renard, M. C. (2003). "Fair Trade: quality, market and conventions." <u>Journal of Rural Studies</u> **19**(1): 87-96.

Ricardo, D. (1821). <u>On the principles of political economy, and taxation</u>. London, John Murray.

Rice, R. (1999). "A place Unbecoming: The coffee farm of northern Latin America." <u>Geographical Review</u> **89**(4).

Richardson, M. and F. Stahler (2007). Fair Trade. <u>Economics Discussion Paper 0709</u>, University of Otago, NZ.

Ridley, M. (1996). <u>The origins of virtue</u>. London, Viking.

Riedel, C. P., F. M. Lopez, A, et al. (2005), "Impacts of Fair Trade: trade and market linkages", Proceedings of the 18th International Farming Symposium, 31 October–3 November, Rome: Food and Agricultural Organisation, http://www.fao.org/ farmingsystems.

Robbins, L. R. (1938). "Interpersonal Comparisons of Utility: A Comment." <u>Economic Journal</u> **48**(192): 635-641.

Robbins, L. R., S. G. Medema, et al. (1998). <u>A history of economic thought : the LSE lectures</u>. Princeton, N.J., Princeton University Press.

Robinson, J. (1933). <u>The Economics of Imperfect Competition</u>. London, Macmillion.

Robson, A. (2001). "The Biological Basis of Economic Behavior." <u>Journal of Economic Literature</u> **XXXIX**: 11-33.

Robson, A. (2002). "Evolution and Human Nature." <u>Journal of Economic Perspectives</u> **16**(2): 89-106.

Romer, P. (1986). "Increasing Returns and Long-Rung Growth." <u>Journal of Political Economy</u> **94**(5): 1002-10037.

Romer, P. (1990). "Endogenous Technological Change." <u>Journal of Political Economy</u> **98**(5): S71-S102.

Romer, P. (1994). "The Origins of Endogenous Growth." Journal of Economic Perspectives **8**(1): 3-22.

Ronchi, L. (2002). A case study of with Coocafe in Costa Rica. PRUS working paper No. 11, University of Sussex Poverty Research Unit.

Ronchi, L. (2002a). Monitoring Impact of Fairtrade Initiatives: A Case study of Kuapa Kookoo and the Day chocolate company, Twin.

Ronchi, L. (2006). "Fairtrade and Market Failures in Agricultural commodity Markets." World Bank Policy Research working Paper 4011.

Rosenberg, M. R. (2003). Exchange-rate determination : models and strategies for exchange-rate forecasting. New York ; London, McGraw-Hill.

Roth, A., E., V. Prasnikar, et al. (1991). "Barganing and Market Behavior in Jerusalem, Ljubljana, Pittsburgh, and Tokyo: An Experimental Study." American Economic Review **81**(5): 1068-1095.

Ruben, R. (2009). The Impact of fair Trade, Wageningen Publishers.

Rubinstein, A. (1982). "Perfect Equilibrium in a Bargaining Model." Econometrica **50**(1): 97-109.

Sexton, Richard J. (1990): 'Imperfect Competition in Agricultural Markets and the Role of Cooperatives: A Spatial Analysis', American Journal of Agricultural Economics, Vol. 72, pp 709-720

Samuelson, P. (1938). "A Note on the Pure Theory of Consumers' Behaviour." Economica **5**: 61-71.

Samuelson, P. A. and W. A. Barnett (2007). Inside the economist's mind : conversations with eminent economists. Malden, MA ; Oxford, Blackwell Pub.

Schumpeter, J. A. (1934). The theory of economic development : an inquiry into profits, capital, credit, interest, and the business cycle. Cambridge, Harvard University Press.

Schumpeter, J. A. (1943). Capitalism, socialism, and democracy. London, G. Allen & Unwin ltd.

Schumpeter, J. A. (1952). Ten great economists from Marx to Keynes. London, Allen & Unwin.

Scitovszky, T. (1941). "A Note on Welfare Propositions in Economics." Review of Economic Studies **9**(1): 77-88.

Sen, A. (1970). "The Impossibility of a Paretian Liberal." The Journal of Political Economy **78**(1): 152-157.

Sen, A. (1977). "Rational Fools: A Critique of the Behavioral Foundations of Economic Theory." Journal of Philosophy and Public affairs **6**: 317-344.

Sen, A. K. (1999). <u>Development as freedom</u>. New York, Knopf.

Sidwell, M. (2008). Unfair Trade. London, Adam Smith Institute.

Simon, H. (1993). "Altruism and Economics." <u>American Economic Review</u> **83**(2): 156-161.

Singer, H. (1950). "The Distribution of Gains between Investing and Borrowing Countries." <u>American Economic Review</u> **40**(2): 473-485.

Smith, A. (1776). <u>An inquiry into the nature and causes of the wealth of nations</u>. London, Printed for W. Strahan and T. Cadell.

Smith, A. M. (2009). "Evaluating the criticisms of Fair Trade." <u>Economic Affairs</u> **29**(4): 29-36.

Stark, O. (1989). "Altruism and the Quality of Life." <u>American Economic Review</u> **79**: 86-90.

Stiglitz, J. E. and A. Charlton (2005). <u>Fair trade for all: how trade can promote development</u>. New York, Oxford University Press.

Stiglitz, J. E. and National Bureau of Economic Research. (1991). <u>The invisible hand and modern welfare economics</u>. Cambridge, MA, National Bureau of Economic Research.

Stiglitz, J. E. and S. Yusuf (2001). <u>Rethinking the East Asia miracle</u>. Washington, D.C.
New York, World Bank ;
Oxford University Press.

Subramanian, S., E. Sadoulet, et al. (1994). <u>Structural adjustment and agriculture : African and Asian experiences</u>. Rome, Food and Agriculture Organization of the United Nations.

Sunkel, O. (1993). <u>Development from within : toward a neostructuralist approach for Latin America</u>. Boulder, CO, Lynne Rienner.

Sunkel, O., B. Hettne, et al. (2001). <u>Comparing regionalisms : implications for global development</u>. New York, Palgrave.

Talbot, J. (1997). "Where Does Your coffee Dollar Go? The Division of Income and Surplus along the Coffee Commodity Chain." <u>Studies in Comparative International Development</u> **32**(1): 56-91.

Taleb, N. (2004). <u>Fooled by randomness : the hidden role of chance in life and in the markets</u>. London, Penguin.

Taleb, N. (2007). <u>The black swan: the impact of the highly improbable</u>. London, Allen Lane.

Tallontire, A. and Vorley, B. (2005) "Achieving fairness in trading between supermarkets and their agrifood supply" (UK Food Group Briefing: September).

Tallontire, A. (1999). An examination of the relationship between Cafédirect and a coffee co-operative in Tanzania Development and Project Planning Centre, University of Bradford. **PhD thesis**

Tallontire, A. (2000). "Partnership in Fair Trade: Reflections from a Case Study of Cafedirect." Development in Practice **10**(2): 166-177.

Tallontire, A., E. Rentsendorj, et al. (2001). Consumers and ethical trade: a review of current litrature. NRI Policy series 12, Greenwich: Natural Resources Institute.

Taylor, R.A. (1971): 'The taxation of agricultural cooperatives: Some economic implications', Canadian Journal of Agricultural Economics, Vol. 19, pp 13-24

Thaler, R. (1985). "Mental Accounting and Consumer Choice." Marketing Science **4**: 199-214.

Trivers, R. L. (1971). "The Evolution of Reciprocal Altruism." Quarterly Review of Biology **46**: 35-57.

"US Census Bureau International Data Base." from http://www.census.gov/ipc/www/idb/.

Utting-Chamorro, K. (2005). "Does Fair Trade make a difference? The case of small coffee Producers in Nicaragua." Development in Practice **15**.

Valkila, J. and A. Nygren (2009). "Impacts of Fair Trade certification on coffee farmers, cooperatives, and laborers in Nicaragua." Agriculture and Human Values **27**(3): 321-33.

Veblen, T. B. (1899). The theory of the leisure class, New York &c.

Vihinen, L. and H.-J. Lee (2004). Fair Trade and the Multilateral Trading system, OECD.

Wade, R. (2004). Governing the market : economic theory and the role of government in East Asian industrialization. Princeton, N.J., Princeton University Press.

Walsh, J. (2004). Fair Trade in the Fields: Outcomes for Peruvian Producers. Department of of Urban Studies and Planning, Massachusetts Institute of Technology. **Master in City Planning**.

Webber, J. (2007). "Fair Trade coffee enthusiasta should confront reality." Cato Journal **27**(1): 109-17.

Weitzman, H. (2006). The bitter cost of "Fair Trade" coffee. Financial Times. 8th September.

Wharton, C. R. (1970). <u>Subsistence agriculture and economic development</u>. London, Cass.

Wilkinson, G. S. (1984). "Reciprocal food sharing in the vampire bat." <u>Nature</u> **308**: 181-184.

Wilkinson, N. (2008). <u>An introduction to behavioral economics</u>. Basingstoke ; New York, Palgrave Macmillan.

Wilson, E. (1975). <u>Sociobiology</u>. Cambridge, Mass., Harvard University Press.

Witt, U. (2003). Evolutionary Economics and the Extension of Evolution to the Economy. <u>6th Buchenback Workshop</u>. Buchenbach, Germany, Max Planck Institute for research into Economic Systems.

Witztum, A. (1996). <u>Fairness and justice in Smith's economic system</u>. London, London School of Economics, Centre for the Philosophy of the Natural and Social Sciences.

Xavier, X. and Sala-I-Martin (1997). "I just Ran Two Million Regressions." <u>American Economic Review</u> **87**(2).

Zadek, S. and P. Tiffin (1996). "Fair Trade: Business or Campaign." <u>Journal of the society for international development</u> **3**: 48-53.

Zajac, E. E. (1978). <u>Fairness or efficiency: An Introduction to Public utility Pricing</u>. Cambridge, Mass, Ballinger.

Zajac, E. E. (1995). <u>Political economy of fairness</u>. Cambridge, Mass, The MIT Press.

Zehner, D. (2002). "An Economic Assessment of Fair Trade in Coffee." <u>Journal of International Business</u>.

Zerjal., Xue., et al. (2003). "The Genetic Legacy of the Mongols." <u>The American Journal of Human Genetics</u> **72**(3): 717–721.
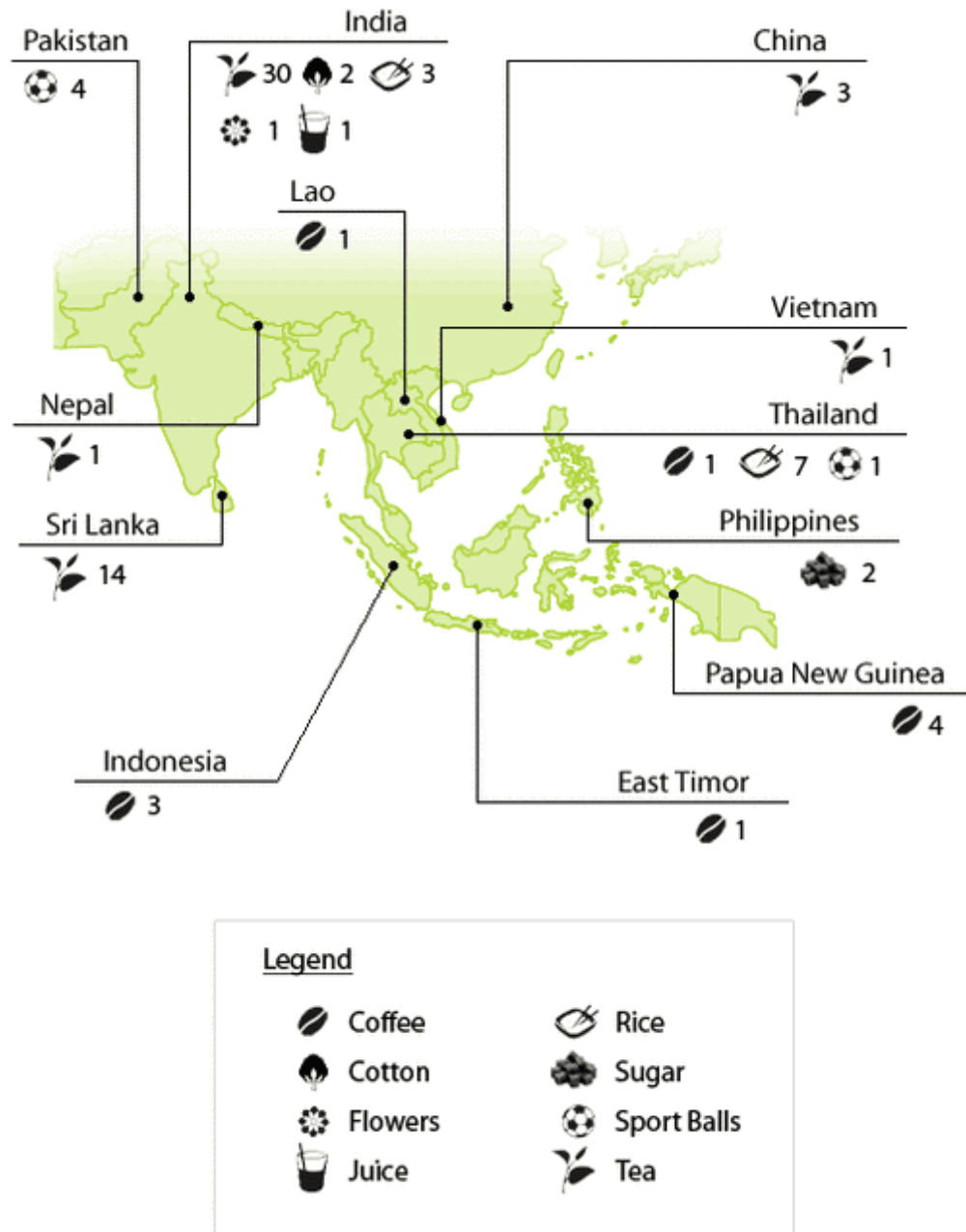
Appendices

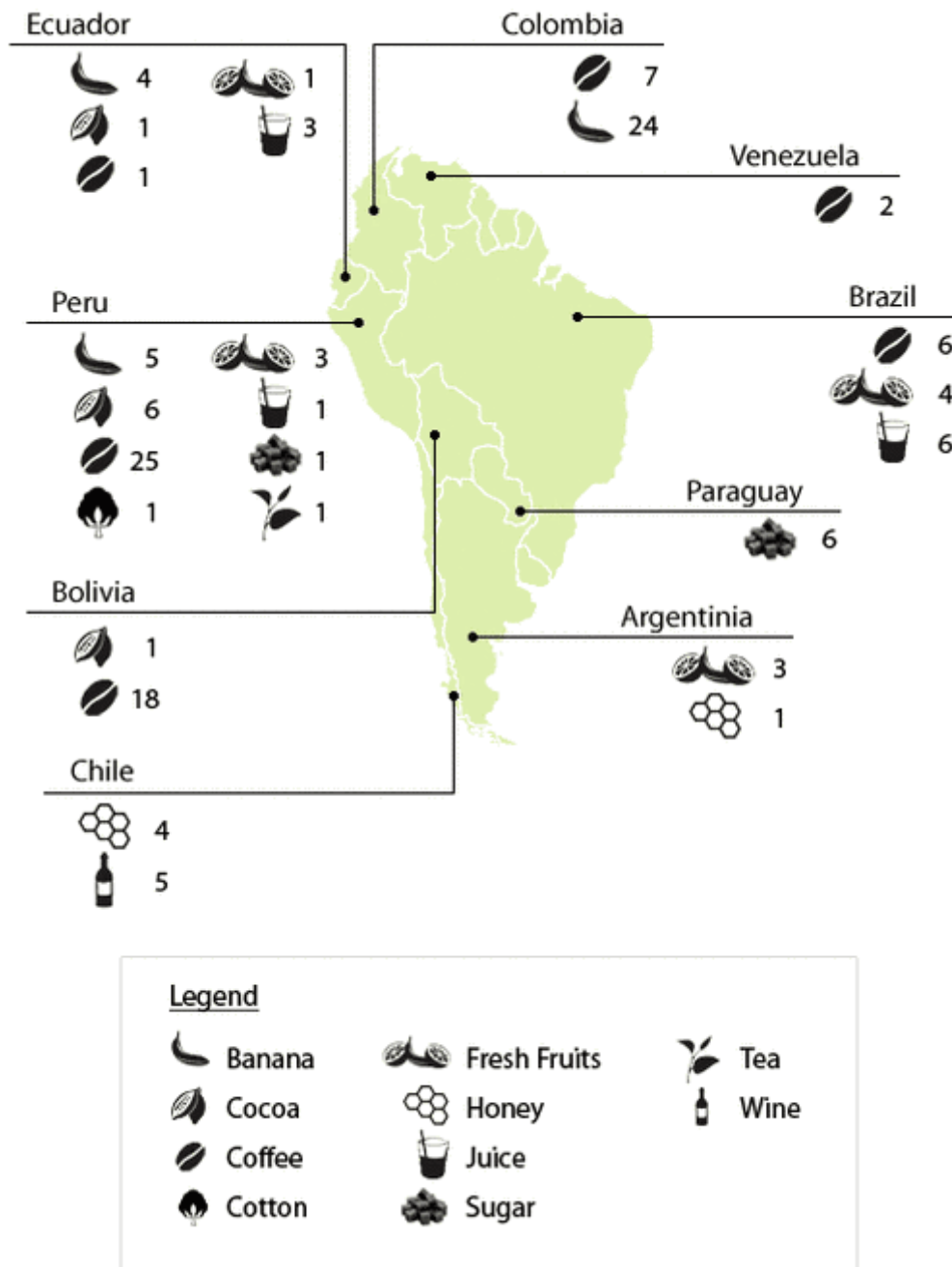## APPENDIX 0.1: FAIR-TRADE COMMODITIES FROM AFRICA
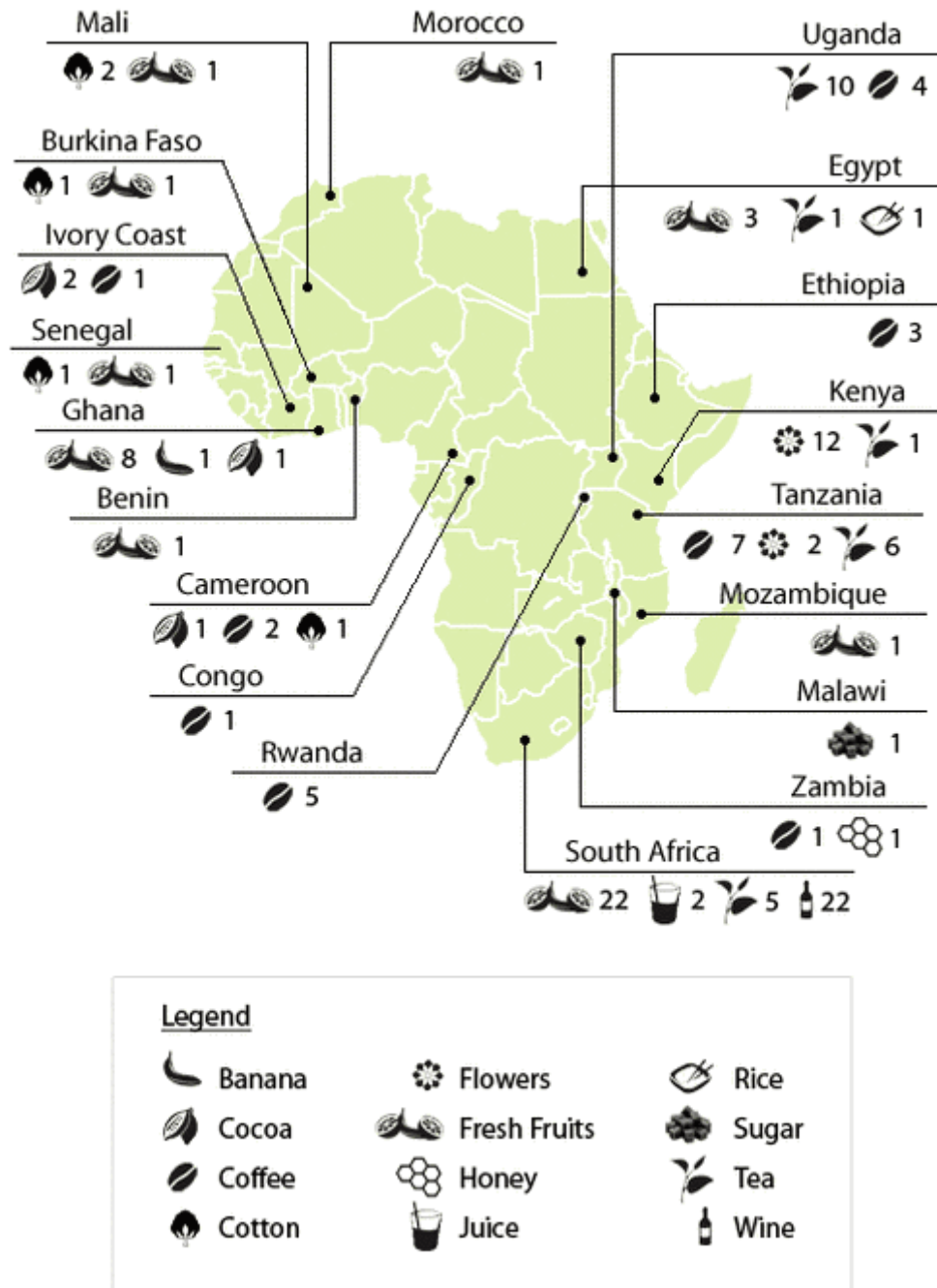
Source: FLO Website (2007)

APPENDIX 0.2: FAIR-TRADE COMMODITIES FROM ASIA

Source: FLO Website (2007)

Source: FLO Website (2007)

APPENDIX 0.4: MARKET SHARE OF COFFEE IN SELECTED COUNTRIES

Belgium	1.70%		Norway	1.10%
Denmark	3.40%		Sweden	1.60%
Finland	0.40%		Switzerland	2.80%
France	0.40%		United Kingdom	1.70%
Germany	1.10%		United States	0.30%
Italy	0.30%		Japan	0.40%
Holland	2.90%			

Sources: Giovannucci (2001, 2003), Zehner, OECD estimates

APPENDIX 0.5: ESTIMATED RETAIL VALUE OF FAIR-TRADE CERTIFIED PRODUCTS (EUROS)

Country	2006	2007	%Δ	2008	2009	%Δ
Australia/New Zealand	6,800,000	10,800,000	59%	18,567,280	28,733,986	55%*
Austria	41,700,000	52,800,000	27%	66,200,000	72,000,000	9%
Belgium	28,000,000	35,000,000	25%	46,780,141	56,431,496	21%
Canada	53,800,000	79,600,000	48%	123,797,132	201,978,074	63%*
Denmark	23,200,000	39,600,000	71%	51,220,106	54,436,609	6%
Finland	22,500,000	34,600,000	54%	54,445,645	86,865,284	60%
France	166,000,000	210,000,000	27%	255,570,000	287,742,792	13%
Germany	110,000,000	141,700,000	29%	212,798,451	267,473,584	26%
Ireland	11,600,000	23,300,000	101%	94,429,586	118,574,416	26%
Italy	34,500,000	39,000,000	13%	41,284,198	43,382,860	5%
Japan	4,100,000	6,200,000	51%	9,567,132	11,283,451	18%*
Latvia					153,500	
Lithunaia					315,380	
Luxembourg	2,800,000	3,200,000	14%	4,249,301	5,327,122	25%
Netherlands	41,000,000	47,500,000	16%	60,913,968	86,818,400	43%
Norway	8,600,000	18,100,000	110%	30,961,160	34,689,522	12%*
Sweden	16,000,000	42,500,000	166%	72,830,302	82,662,331	13%
Switzerland	142,300,000	158,100,000	11%	168,766,526	180,160,263	7%
Spain	1,900,000	3,900,000	105%	5,483,106	8,030,724	46%
South Africa					458,076	
United Kingdom	409,500,000	704,300,000	72%	880,620,304	897,315,061	2%*
USA	499,000,000	730,800,000	46%	757,753,382	851,403,590	12%*
Rest of the world				130,722	18,099,255	
TOTAL	1,623,300,000	2,381,000,000	47%	2,956,368,442	3,394,335,776	14-15%

## APPENDIX 0.6: PRODUCT SPICIFIC ESTIMATED UK RETAIL SALES BY VALUE FOR 1998–2009 (£MILLION)

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Coffee	13.7	15.0	15.5	18.6	23.1	34.3	49.3	65.8	93.0	117.0	137.3	157.0
Tea	2.0	4.5	5.1	5.9	7.2	9.5	12.9	16.6	25.1	30.0	64.8	68.1
Cocoa products*	1.0	2.3	3.6	6.0	7.0	10.9	16.5	21.9	29.7	25.5	26.8	44.2
Honey products*	n/a	n/a	0.9	3.2	4.9	6.1	3.4	3.5	3.4	2.7	5.2	4.6
Bananas	n/a	n/a	7.8	14.6	17.3	24.3	30.6	47.7	65.6	150.0	184.6	209.2
Flowers	n/a	n/a	n/a	n/a	n/a	n/a	4.3	5.7	14.0	24.0	33.4	30.0
Wine	n/a	n/a	n/a	n/a	n/a	n/a	1.5	3.3	5.3	8.2	10.0	16.4
Cotton	n/a	n/a	n/a	n/a	n/a	n/a	n/a	0.2	4.5	34.8	77.9	50.1
Other	n/a	n/a	n/a	2.2	3.5	7.2	22.3	30.3	45.7	100.8	172.6	219.4
TOTAL	16.7	21.8	32.9	50.5	63.0	92.3	140.8	195.0	286.3	493.0**	712.6	799.0***

* The figures against these products represent the cocoa part of all products containing cocoa and the honey part of all products containing honey.

** Following review, some of the 2007 figures have been amended but the total remains the same.

*** Subsequent press releases in March 2011 have stated a final revised figure of £836m, and an estimated 2010 figure of £1.17bn

APPENDIX 0.7: TOTAL ESTIMATED UK RETAIL SALES BY VALUE 1998-2008 (£MILLION)
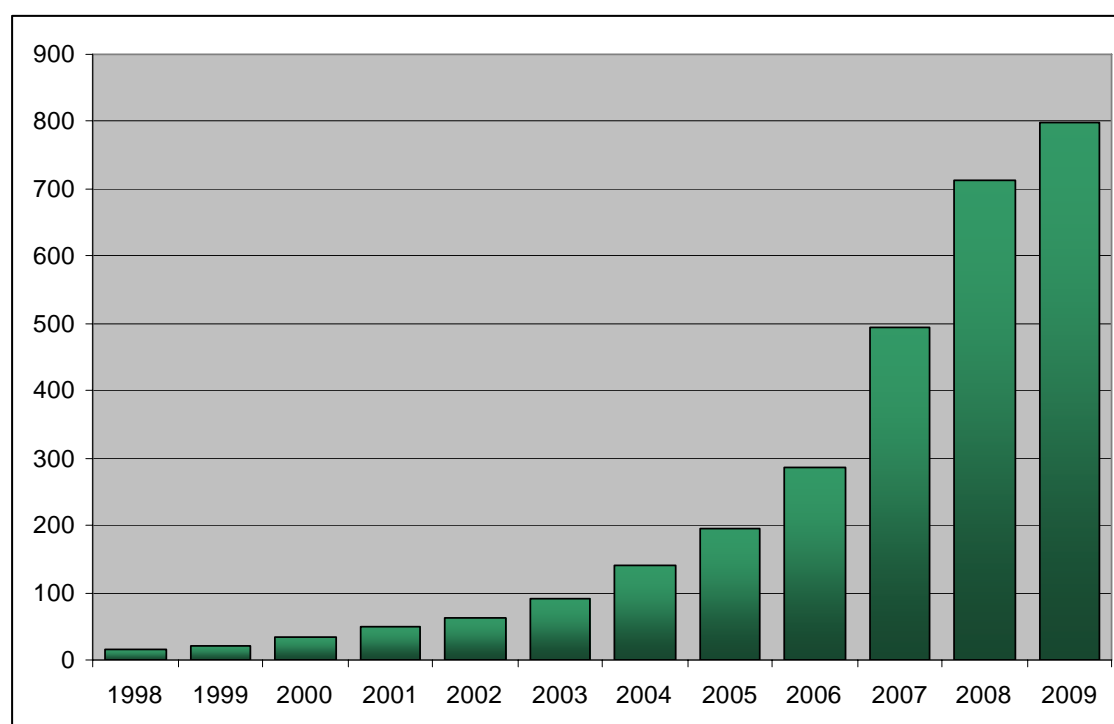
APPENDIX 1.1: ESTIMATED PRICE COMPOSITION OF INSTANT COFFEE, 1996-2001 (CURRENT US$ THOUSANDS PER TON OF COFFEE BEANS)

	Commercial chain Nestlé–Sainsbury			Fair trade chain Prodecoop–Cafédirect		
	1996	2001	% change	1996	2001	% change
Final consumer price	10.6	9.4	-11%	14.2	16.0	+13%
Wholesale and retail margin	2.6	3.1*	+19%	3.9	4.8	+21%
Marketing licence	0	0	0	0.26	0.31	+19%
Advertising	0.66	0.62*	- 1%	1.9	2.2	+21%
Roasting, storage, transport, finance	4.8	4.3*	-11%	5.1	5.9	+15%
FOB price Nicaragua	2.64	1.41	-46%	2.91	2.64	-9%
Export taxes and fees	0.15	0.11	-31%	0.20	0.15	-13%
Processing, transport, finance	0.53	0.62	+15%	0.57	0.66	+13%
Producer price	1.96	0.68	-64%	2.03	1.87	-10%

Source: Data constructed from Nestlé (1995a, 1995b); Fair Trade Foundation (1995); Unicafé (1996); informants at Oxfam UK, Twin Trading, Sainsbury supermarket; information provided by Nestlé-UK, Unicafé, Prodecoop and two coffee processing plants in Nicaragua.
* These data are informed estimates.

APPENDIX 1.2: PERCENTAGE DISTRIBUTION OF INCOME ALONG THE COFFEE CHAIN (1971-1995)
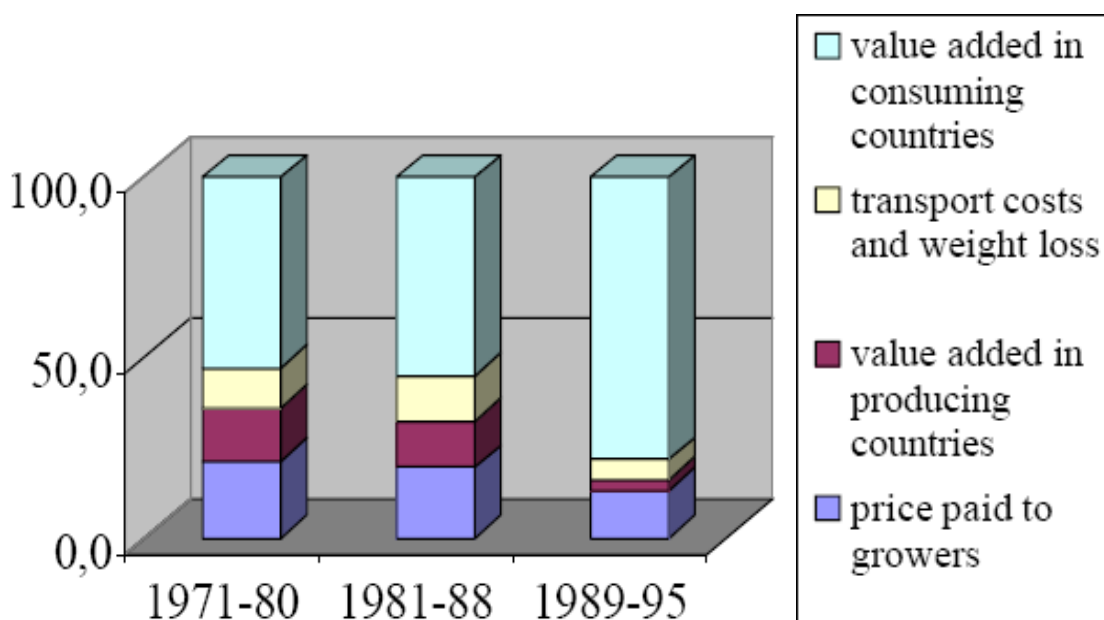
Taken from Talbot (1997)

APPENDIX 1.3: STATISTICS FROM IMHIF AND LEE (2007)

	COAINE (FT)	Mejillones (FT)	Anditrade (FT ethos)	Copacabana (Non-FT)
Year began exporting FT	2004*	2002	-	-
Organic certification	1995	1998	Yes	199
No. of Members	370	128	1200	320
Proportion of supply to FT (%)	65	40	-	-
Stage of production purchased (1 = early........3 late)[+]	Green Coffee (3) (Pergamo)	Green Coffee (3) (Pergamo)	Berries (1)	Stewed corn (2)
Price received for non-organic green coffee	1.39	1.39	1.18	Unknown[++]
Price paid to producer ($ per lb)	0.876**	0.975**	0.13125**	£0.29**
Yield per hectare (lbs)	1563	1898	8500	2310
Revenue per hectare ($)	1369	1851	1275	670
Annual costs per hectare ($)	592**	620**	450**	400**
Net annual profit per hectare ($)	777	1231	665	270
Average Producer's education (%)				
- No education	52.5	75	65	41
- Primary	22.5	17.5	22.5	22.5
- Secondary	20	7.5	12.5	4.8
- Tertiary	5	0	0	4.8
Average Children's education (%)				
- No education	26	27.7	21.7	41
- Primary	34.8	33.6	36.2	33.6
- Secondary	34	34.3	42	21
- Tertiary	5.2	4.4	0	4.5
Access to potable water (%)	12.5	70	42.5	19
Electricity in homes	-	70	19	14
Income supplemented by coca (%)	6.5	0	23	36
Access to credit %	77	100	0***	0***
Revenue from the social premium ($) (per head in parentheses)	8642 (23.36)	17284 (135)	-	-
Provision of education facilities	No	No	No	No
Investment in occupational training and production courses	Yes	Yes	Partial In the past	No

* FLO cert 1994, lost its certification 1998 and was recertified 2004.
** Note that due to the different levels of processing involved these figures are not directly comparable; delivery costs have been subtracted and the FT prices are not inclusive of the social premium.
*** this figure is questionable, in that the wording of the report is appears a touch uncertain "neither Anditrade nor Copacabana seem to facilitate financing for their producers" (p.85)
[+]Coffee value chain: 1.Berries, 2. Stewed corn, 3.Green coffee, 4.Rosted coffee.
[++]Prices are averages, taking into account the organic premium. While Copacabana is unknown it is assumed to be substantially < $1.37/lb

APPENDIX 3.1: FARMER A'S INCOME (UNLIMTED SPARE CAPACITY)

$${}^{*}Y_A = Y_A \pm \Delta Y_A, \; \Rightarrow \Delta Y_A = {}^{*}Y_A - Y_A \Rightarrow \Delta Y_A = (P_M)(Q_A - {}^{A}Q_{FT}) + (P_{FT})(Q_{FT}) - (P_M)(Q_A)$$

$${}^{*}Y_A = (P_M)(Q_A - {}^{A}Q_{FT}) + (P_{FT})(Q_{FT})$$

$${}^{*}Y_A = (P_M)(Q_A - \alpha Q_{FT}) + (P_{FT})(Q_{FT})$$

$${}^{*}Y_A = (P_M)(Q_A - \alpha Q_{FT}) + (P_M + \varepsilon)(Q_{FT})$$

$${}^{*}Y_A = P_M Q_A - \alpha P_M Q_{FT} + P_M Q_{FT} + \varepsilon Q_{FT}$$

APPENDIX 3.2: AGGREGATE INCOME CHANGE (UNLIMITED SPARE CAPACITY)

$$\Delta Y = ({}^{*}Y_A + {}^{*}Y_B) - (Y_A + Y_B)$$

$$\Delta Y = ((P_M)(Q_A - {}^{A}Q_{FT}) + (P_{FT})(Q_{FT})) + ((P_M)(Q_B - {}^{B}Q_{FT})) - ((P_M)(Q_A) + (P_M)(Q_B))$$

$$\Delta Y = ((P_M)(Q_A - \alpha Q_{FT}) + (P_{FT})(Q_{FT})) + ((P_M)(Q_B - (1-\alpha)(Q_{FT}))) - ((P_M)(Q_A) + (P_M)(Q_B))$$

$$\Delta Y = ((P_M)(Q_A - \alpha Q_{FT}) + (P_M + \varepsilon)(Q_{FT})) + ((P_M)(Q_B - (1-\alpha)(Q_{FT}))) - ((P_M)(Q_A) + (P_M)(Q_B))$$

$$\Delta Y = (P_M Q_A - P_M \alpha Q_{FT} + P_{FT} Q_{FT} + P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT}) - (P_M Q_A + P_M Q_B)$$

$$\Delta Y = P_{FT} Q_{FT} - P_M Q_{FT}$$

$${}^{*}Y = ((P_M)(Q_A - {}^{A}Q_{FT}) + (P_{FT})(Q_{FT})) + ((P_M)(Q_B - {}^{B}Q_{FT}))$$

$${}^{*}Y = P_M Q_A - P_M {}^{A}Q_{FT} + P_{FT} Q_{FT} + P_M Q_B - P_M {}^{B}Q_{FT}$$

$${}^{*}Y = P_M Q_A - P_M \alpha Q_{FT} + P_{FT} Q_{FT} + P_M Q_B - P_M ((1-\alpha)(Q_{FT}))$$

$${}^{*}Y = P_M Q_A - P_M \alpha Q_{FT} + P_{FT} Q_{FT} + P_M Q_B - P_M (Q_{FT} - \alpha Q_{FT})$$

$${}^{*}Y = P_M Q_A - P_M \alpha Q_{FT} + P_{FT} Q_{FT} + P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT}$$

APPENDIX 3.3: FULLY EXPANDED QUANTITY EQUATION FOR FARMER A (LIMITED SPACE CAPACITY)

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E({}^AQ_{FT}) + \widetilde{u} + {}^AQ_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E({}^AQ_{FT}) + ({}^{*op}u + {}^Fu) + {}^AQ_{Con})$$

$$^{*op}u_2 = Q_A + Q_{FT} - {}^{*Op}Q_{con} - {}^AQ_{FT} - \overline{Q}_A$$

$$^Fu = E({}^AQ_{FT}) - {}^AQ_{FT}$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E({}^AQ_{FT}) + (Q_A + Q_{FT} - {}^{*op}Q_{con} - {}^AQ_{FT} - \overline{Q}_A + {}^Fu) + {}^AQ_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E({}^AQ_{FT}) + (Q_A + Q_{FT} - {}^{*op}Q_{con} - {}^AQ_{FT} - \overline{Q}_A + (E({}^AQ_{FT}) - {}^AQ_{FT}) + {}^AQ_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E({}^AQ_{FT}) + (Q_A + Q_{FT} - {}^{*op}Q_{con} - \alpha Q_{FT} - \overline{Q}_A + (E({}^AQ_{FT}) - \alpha Q_{FT}) + {}^AQ_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E({}^AQ_{FT}) + \widetilde{u} + {}^AQ_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E(\alpha Q_{FT}) + \widetilde{u} + \lambda Q_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E(\alpha Q_{FT}) + \widetilde{u} + ({}^n\lambda + \psi)Q_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E(\alpha Q_{FT}) + \widetilde{u} + ({}^n\lambda + \psi)Q_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E(\alpha Q_{FT}) + \widetilde{u} + \left(\left(\frac{{}^B\lambda}{2} + \frac{{}^{*A}\lambda}{2}\right) + \psi\right)Q_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*Q_{Con} - E(\alpha Q_{FT}) + \left(\frac{{}^{*A}\lambda}{2} + \psi\right)Q_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*(Q_A + Q_{FT} - E({}^AQ_{FT}) - \overline{Q}_A) - \alpha Q_{FT} + \widetilde{u} + \left(\frac{{}^{*A}\lambda}{2} + \psi\right)Q_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*(Q_A + Q_{FT} - E(\alpha Q_{FT}) - \overline{Q}_A) - \alpha Q_{FT} + \widetilde{u} + \left(\frac{{}^{*A}\lambda}{2} + \psi\right)Q_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*(Q_A + Q_{FT} - E(\alpha Q_{FT}) - \overline{Q}_A) - \alpha Q_{FT} + \widetilde{u} + \left(\frac{{}^{*A}\lambda}{2} + \psi\right)(Q_A + Q_{FT} - E({}^AQ_{FT}) - \overline{Q}_A)$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^*(Q_A + Q_{FT} - E(\alpha Q_{FT}) - \overline{Q}_A) - \alpha Q_{FT} + \widetilde{u} + \left(\frac{{}^{*A}\lambda}{2} + \psi\right)(Q_A + Q_{FT} - E(\alpha Q_{FT}) - \overline{Q}_A)$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - (Q_A + Q_{FT} - E(\alpha Q_{FT}) - \overline{Q}_A) - \alpha Q_{FT} + \widetilde{u} + \left(\frac{^{*A}\lambda}{2} + \psi\right)(Q_A + Q_{FT} - E(\alpha Q_{FT}) - (Q_A + u_1)$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - {}^{*}(Q_A + Q_{FT} - E(\alpha Q_{FT}) - (Q_A + u_1) - \alpha Q_{FT} + \widetilde{u} + \left(\frac{^{*A}\lambda}{2} + \psi\right)(Q_A + Q_{FT} - E(\alpha Q_{FT}) - (Q_A + u_1)$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - Q_{Con} - \alpha Q_{FT} + \widetilde{u} + (\frac{\left(\dfrac{\left(\dfrac{\widetilde{u}}{Q_{Con}/100}\right)}{}\bigg/ 100\right)}{2} + \psi)Q_{Con})$$

$$^{*LC}Q_A = (Q_A + Q_{FT} - Q_{Con} - E(\alpha Q_{FT}) + \widetilde{u} + \left(\frac{1}{2}{}^{*A}\lambda + \psi\right)Q_{Con})$$

APPENDIX 3.4: FULLY EXPANDED QUANTITY EQUATION FOR FARMER B (LIMITED SPARE CAPACITY)

$$^{*LC}Q_B = (Q_B - {}^{B}Q_{FT} + {}^{B}Q_{Con})$$

$$^{*LC}Q_B = (Q_B - (1-\alpha)Q_{FT} + (1-\lambda)Q_{Con})$$

$$^{*LC}Q_B = (Q_B - (1-\alpha)Q_{FT} + (1-({}^{n}\lambda + \psi))Q_{Con})$$

$$^{*LC}Q_B = (Q_B - (1-\alpha)Q_{FT} + (1-(\left(\frac{^{B}\lambda}{2} + \frac{^{*A}\lambda}{2}\right) + \psi))Q_{Con})$$

$$^{*LC}Q_B = (Q_B - (1-\alpha)Q_{FT} + (1-\left(\frac{^{*A}\lambda}{2} + \psi\right))Q_{Con})$$

$$^{*LC}Q_B = (Q_B - (1-\alpha)Q_{FT} + (1-\left(\frac{^{*A}\lambda}{2} + \psi\right))(Q_A + Q_{FT} - E({}^{A}Q_{FT}) - \overline{Q}_A))$$

$$^{*LC}Q_B = (Q_B - (1-\alpha)Q_{FT} + (1-(\left(\frac{^{*A}\lambda}{2}\right) + \psi))(Q_A + Q_{FT} - E(\alpha Q_{FT}) - \overline{Q}_A))$$

$$^{*LC}Q_B = (Q_B - (1-\alpha)Q_{FT} + (1-(\left(\frac{^{*A}\lambda}{2}\right) + \psi))(Q_A + Q_{FT} - E(\alpha Q_{FT}) - (Q_A + u_1)))$$

APPENDIX 3.5: FULLY EXPANDED INCOME EQUATION FOR FARMER A (LIMITED SPARE CAPACITY)

$$^{*LC}Y_A = Y_A + \Delta Y_A,$$

$$^{*LC}Y_A = (P_M)(Q_A - Q_{Con} - {}^A Q_{FT} + {}^A Q_{Con}) + (P_{FT})(Q_{FT})$$

$$^{*LC}Y_A = (P_M Q_A - P_M Q_{Con} - P_M {}^A Q_{FT} + P_M {}^A Q_{Con}) + (P_{FT} Q_{FT})$$

$$^A Q_{FT} = \alpha Q_{FT}$$

$$^{*LC}Y_A = (P_M Q_A - P_M Q_{Con} - P_M \alpha Q_{FT} + P_M {}^A Q_{Con}) + (P_{FT} Q_{FT})$$

$$^A Q_{Con} = \lambda Q_{Com}$$

$$^{*LC}Y_A = (P_M Q_A - P_M Q_{Con} - \alpha P_M Q_{FT} + \lambda P_M Q_{Con}) + (Q_{FT} P_{FT})$$

$$\lambda = {}^n\lambda + \psi$$

$$^{*LC}Y_A = (P_M Q_A - P_M Q_{Con} - \alpha P_M Q_{FT} + ({}^n\lambda + \psi)(P_M Q_{Con}) + (Q_{FT} P_{FT})$$

$$^{*LC}Y_A = (P_M Q_A - P_M Q_{Con} - \alpha P_M Q_{FT} + ({}^n\lambda P_M Q_{Con} + \psi P_M Q_{Con}) + (Q_{FT} P_{FT})$$

$$^n\lambda = \left(\frac{{}^B\lambda}{2} + \frac{{}^A\lambda}{2} \right)$$

$$^{*LC}Y_A = (P_M Q_A - P_M Q_{Con} - \alpha P_M Q_{FT} + (\left(\frac{{}^B\lambda}{2} + \frac{{}^A\lambda}{2} \right) P_M Q_{Con}) + \psi P_M Q_{Con}) + (Q_{FT} P_{FT})$$

$$^B\overline{\lambda} = 0$$

$$^{*LC}Y_A = (P_M Q_A - P_M Q_{Con} - \alpha P_M Q_{FT} + (\left(\frac{{}^A\lambda}{2} \right) P_M Q_{Con}) + \psi P_M Q_{Con}) + (Q_{FT} P_{FT})$$

$$^A\lambda = \alpha - E(\alpha)$$

$$^{*LC}Y_A = (P_M Q_A - P_M Q_{Con} - \alpha P_M Q_{FT} + (\left(\frac{\alpha - E(\alpha)}{2} \right) P_M Q_{Con}) + \psi P_M Q_{Con}) + (Q_{FT} P_{FT})$$

$$Q_{Con} = Q_A + Q_{FT} - E({}^A Q_{FT}) - \overline{Q}_A$$

$$P_M Q_{Con} = P_M Q_A + P_M Q_{FT} - P_M E(\alpha Q_{FT}) - P_M \overline{Q}_A$$

$${}^{*LC}Y_A = (P_M Q_A - P_M Q_A + P_M Q_{FT} - P_M E(\alpha Q_{FT}) - P_M \overline{Q}_A - \alpha P_M Q_{FT} + \left(\frac{\alpha - E(\alpha)}{2}\right) P_M Q_{Con} + \psi P_M Q_{Con}) + (Q_{FT} P_{FT}$$

$${}^{*LC}Y_A = (P_M Q_{FT} - P_M E(\alpha Q_{FT}) - P_M \overline{Q}_A - \alpha P_M Q_{FT} + \left(\frac{\alpha - E(\alpha)}{2}\right) P_M Q_{Con} + \psi P_M Q_{Con}) + (Q_{FT} P_{FT})$$

$${}^{*LC}Y_A = (P_M Q_{FT} - P_M E(\alpha Q_{FT}) - P_M \overline{Q}_A - \alpha P_M Q_{FT} + \left(\frac{\alpha - E(\alpha)}{2}\right) P_M Q_A + P_m Q_{FT} - P_M E(\alpha Q_{FT}) - P_m \overline{Q}_A + \psi P_M Q_{Con}) + (Q_{F\,T}$$

APPENDIX 3.6: FULLY EXPRESSED INCOME EQUATION FOR FARMER B (LIMITED SPARE CAPACITY)

$${}^{*LC}Y_B = Y_B \pm \Delta Y_B$$

$$Y_B \pm \Delta Y_B = (P_M)(Q_B - {}^B Q_{FT} + {}^B Q_{Con})$$

$${}^{*LC}Y_B = (P_M)(Q_B - {}^B Q_{FT} + {}^B Q_{Con})$$

$${}^{*LC}Y_B = P_M Q_B - P_M {}^B Q_{FT} + P_M {}^B Q_{Con}$$

$${}^B Q_{FT} = (1 - \alpha) Q_{FT}$$

$${}^B Q_{FT} = Q_{FT} - \alpha Q_{FT}$$

$$P_M {}^B Q_{FT} = P_M Q_{FT} - P_M \alpha Q_{FT}$$

$${}^{*LC}Y_B = P_M Q_B - (P_M Q_{FT} - P_M \alpha Q_{FT}) + P_M {}^B Q_{Con}$$

$${}^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M {}^B Q_{Con}$$

$${}^B Q_{Con} = (1 - \lambda) Q_{Con}$$

$${}^B Q_{Con} = Q_{Con} - \lambda Q_{Con}$$

$$P_M (Q_{Con} - \lambda Q_{Con}) = P_M Q_{Con} - P_M \lambda Q_{con}$$

$${}^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - P_M \lambda Q_{Con}$$

$$\lambda = {}^n\lambda + \psi$$

$$\lambda Q_{Con} = {}^n\lambda Q_{Con} + \psi Q_{Con}$$

$$P_M \lambda Q_{Con} = P_M {}^n\lambda Q_{Con} + P_M \psi Q_{Con}$$

$${}^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - (P_M {}^n\lambda Q_{Con} - P_M \psi Q_{Com}$$

$${}^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - P_M {}^n\lambda Q_{Con} + P_M \psi Q_{Com}$$

$${}^n\lambda = \frac{{}^A\lambda}{2}$$

$${}^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - \left(P_M \frac{{}^A\lambda}{2} Q_{Con} \right) + \psi Q_{Com}$$

$${}^A\lambda = \alpha - E(\alpha)$$

$${}^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - \left(P_M \frac{\alpha - E(\alpha)}{2} Q_{Con} \right) + \psi Q_{Com}$$

$$\psi = \lambda - {}^n\lambda$$

$$Q_{con}(\lambda - {}^n\lambda) = \lambda Q_{Con} - {}^n\lambda Q_{Con}$$

$${}^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - \left(P_M \frac{\alpha - E(\alpha)}{2} Q_{Con} \right) + \lambda Q_{Com} - {}^n\lambda Q_{con}$$

$${}^{*LC}Y_B = P_M Q_B - P_M Q_{FT} + P_M \alpha Q_{FT} + P_M Q_{Con} - \left(P_M \left(\frac{1}{2}(\alpha - E(\alpha)) \right) Q_{Con} \right) + \lambda Q_{Com} - {}^n\lambda Q_{con}$$

## APPENDIX 3.7: SUMMARISED DESCRIPTION OF VARIABLES

	Variable description	Unlimited capacity	Limited capacity	General comments and degree of openness to policy maker
α	The required quantity adjustment that results from a change in consumer preference	Zero sum. Fails Kaldor-Hicks. A value of 1 fully protects Farmer B from negative externalities	Zero sum. Fails Kaldor-Hicks. A value of 1 helps, but does not fully protect farmer B from negative externalities	Largely exogenous, difficult to see how a policymaker would influence this variable.
Q_{FT}	Quantity demanded of fair-trade	Non zero sum. Passes Kaldor-Hicks. Only Pareto improving if $\alpha = 1$	Non zero sum. Passes Kaldor-Hicks Not necessarily Pareto improving	Chapter II explains this demand. It can be influenced by information and disposable income, but proliferation of relevant information can be costly.
$^A\lambda$	Farmer A's ability to react rationally to the quantity adjustment that fair-trade will bring about.	n/a	Zero sum. Fails Kaldor-Hicks.	Little to no policymaker control.
Q_{Con}	Quantity that Farmer A rejects in order to accommodate a fair-trade order.	n/a	Zero sum. Fails Kaldor-Hicks.	Limited possibility for policymaker influence. As it is zero sum, assisting one farmer comes at the direct expense of the other and generates no aggregate value.
λ	The result of a commercial battle over a previously rejected quantity of conventionally priced produce.	n/a	Zero-sum. Fails Kaldor-Hicks.	No policymaker control, except perhaps indirectly by capacity building. (λ and ψ related)
ψ	captures the relative strengths that feed the result of λ commercial battle	n/a	Zero-sum. Fails Kaldor-Hicks.	No policymaker control, except perhaps indirectly by capacity building. (λ and ψ related)
Ω	Coefficient by which the buyer can punish the fair-trade farmer for underestimation of Q_{Con}	n/a	Zero-sum. Fails Kaldor-Hicks.	No policymaker control.

APPENDIX 4.10: PAIR-WISE INDEPENDENCE TESTS: MATERIAL WELFARE

| Variable	Chi-sq	Spearman Correlation	Kendall tau-b	Polychoric Correlation	Tetrachoric Correlation
Timing of wages	11.413 (0.003)	- 0.0421 (0.4193)	- 0.0417 (0.4189)		
Minimum wage	20.9 (0.000)	0.2471 (0.0001)	0.2382 (0.0001)		
Keep farming if wages fell	11.072 (0.001)				0.3232 (0.001)
Ownership of durables index		-0.2076 (0.0000)	-0.1903 (0.0001)	-0.3014 (0.0909)	
Saving ability	20.222 (0.000)	0.1807 (0.0005)	0.1690 (0.0005)	0.3142 (0.0034)	
Occasional food shortages	1.0399 (0.308)				0.1345 (0.3236)
Subsidised accommodation	7.5542 (0.006)				0.2849 (0.0107)

H0 for every test is independence between FT and the stated variable. Correlation coefficients are specified from a fair-trade dummy (ft=1) and the opposing variable is a ranked value which conforms to a standard in which the higher the number the more positive the outcome. Hence, for all but chi-squared, positive numbers imply favouritism towards fair-trade, negative numbers favour the control group. P-values in parentheses.

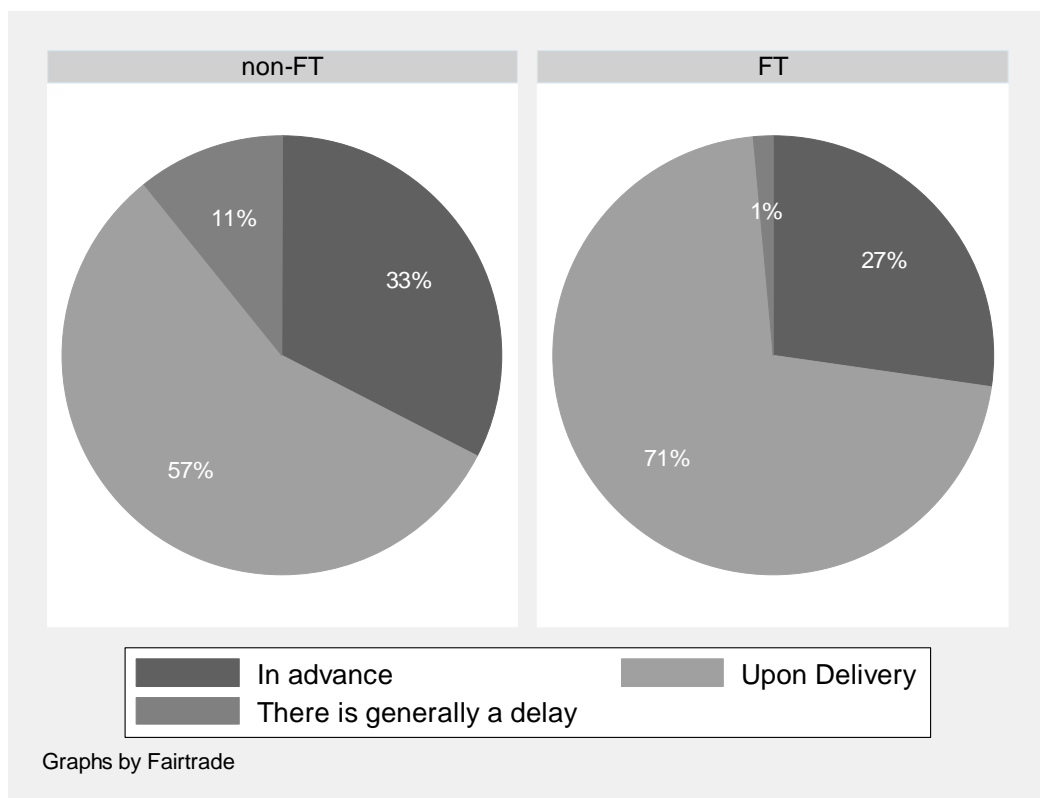# APPENDIX 4.11: DISTRIBUTION OF HOUSEHOLD INCOME PER CAPITA

excludes outside values
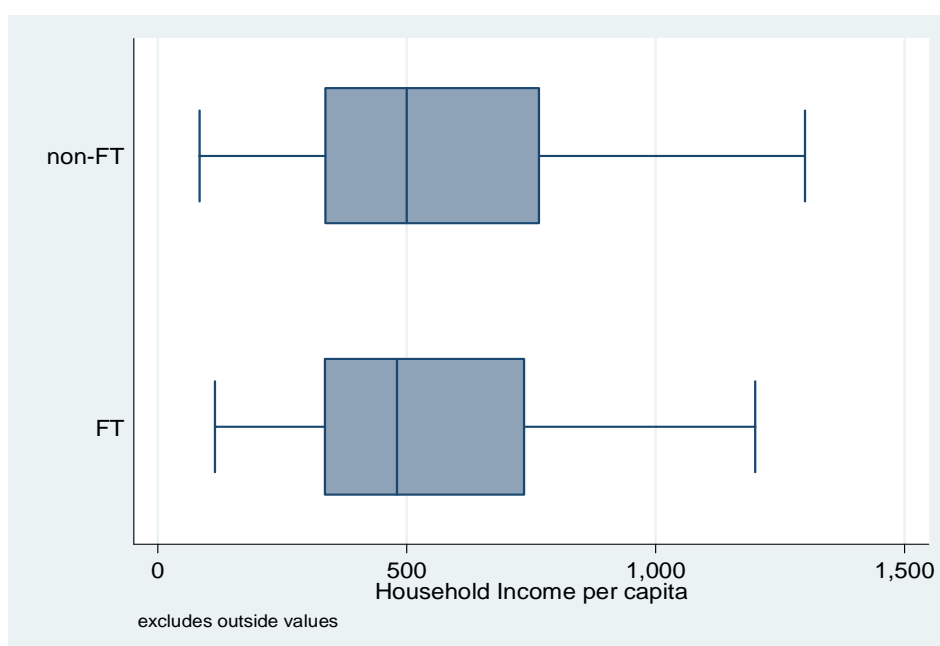
t-test does not reject that means are the same.

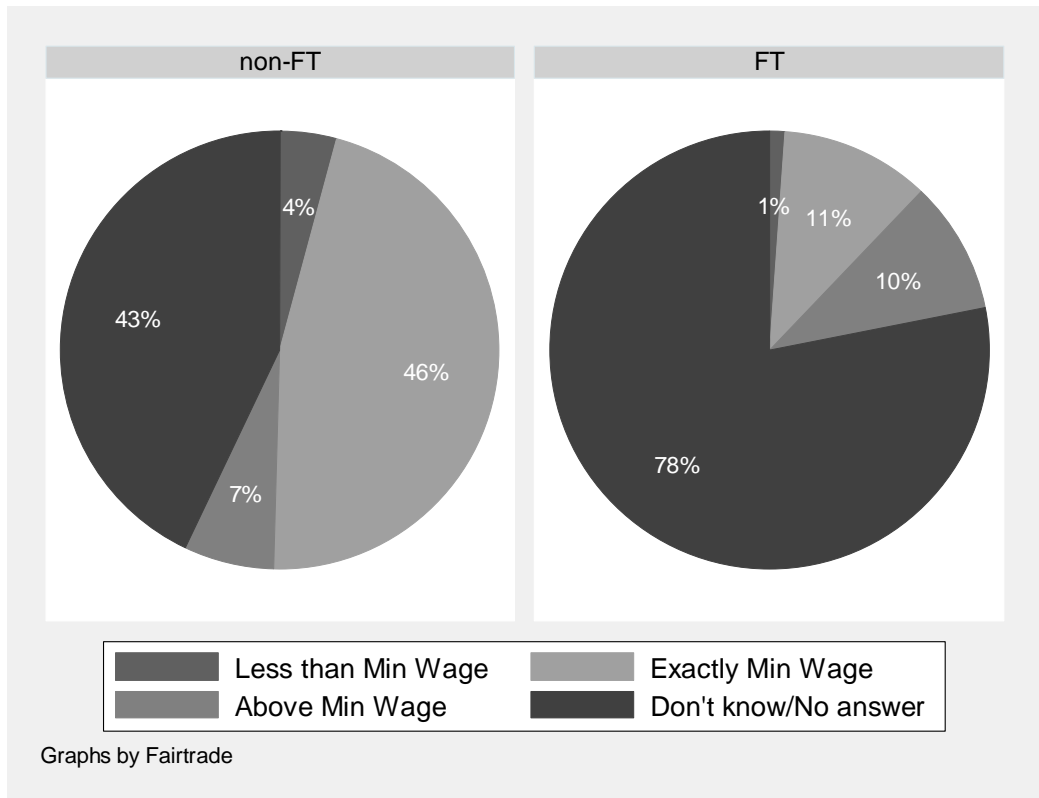## APPENDIX 4.12: DISTRIBUTION OF HOUSEHOLD EXPENDITURE PER CAPITA
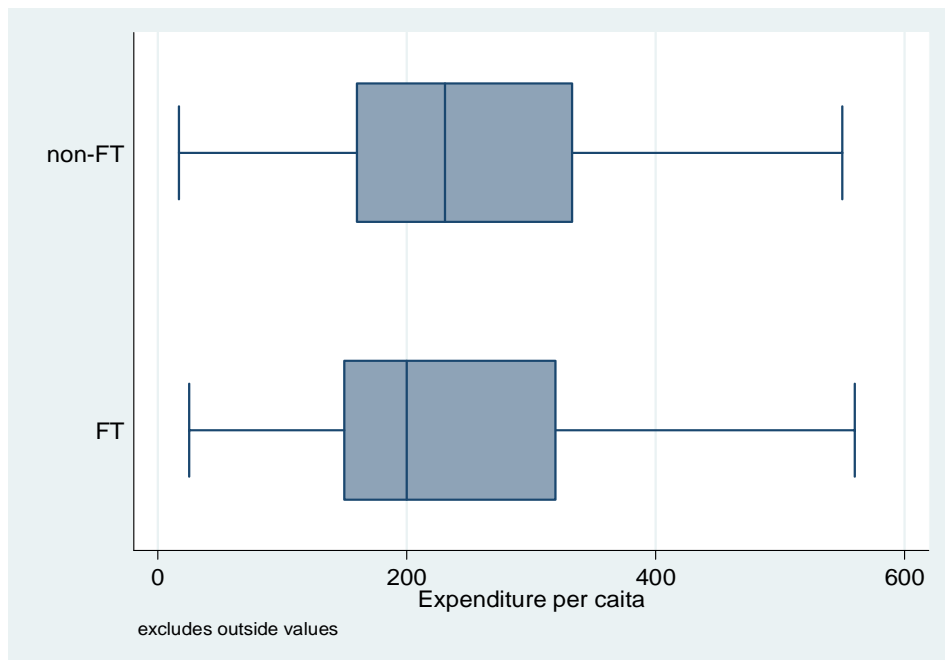
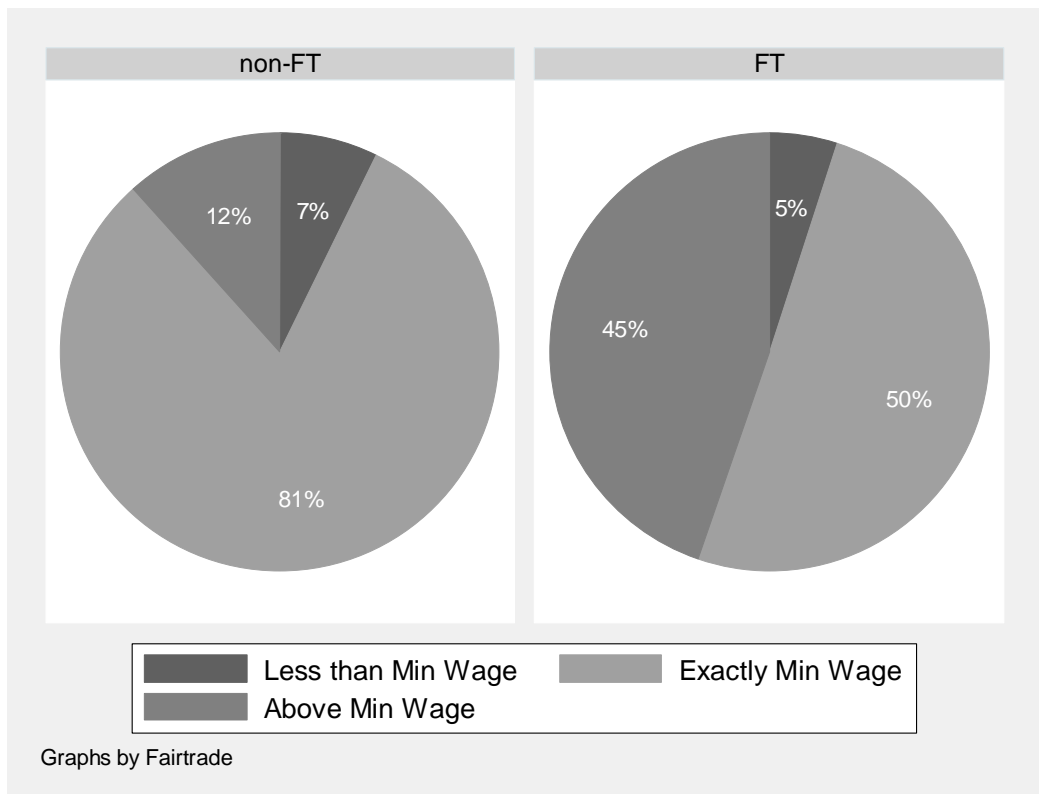t-test does not reject that means are the same.
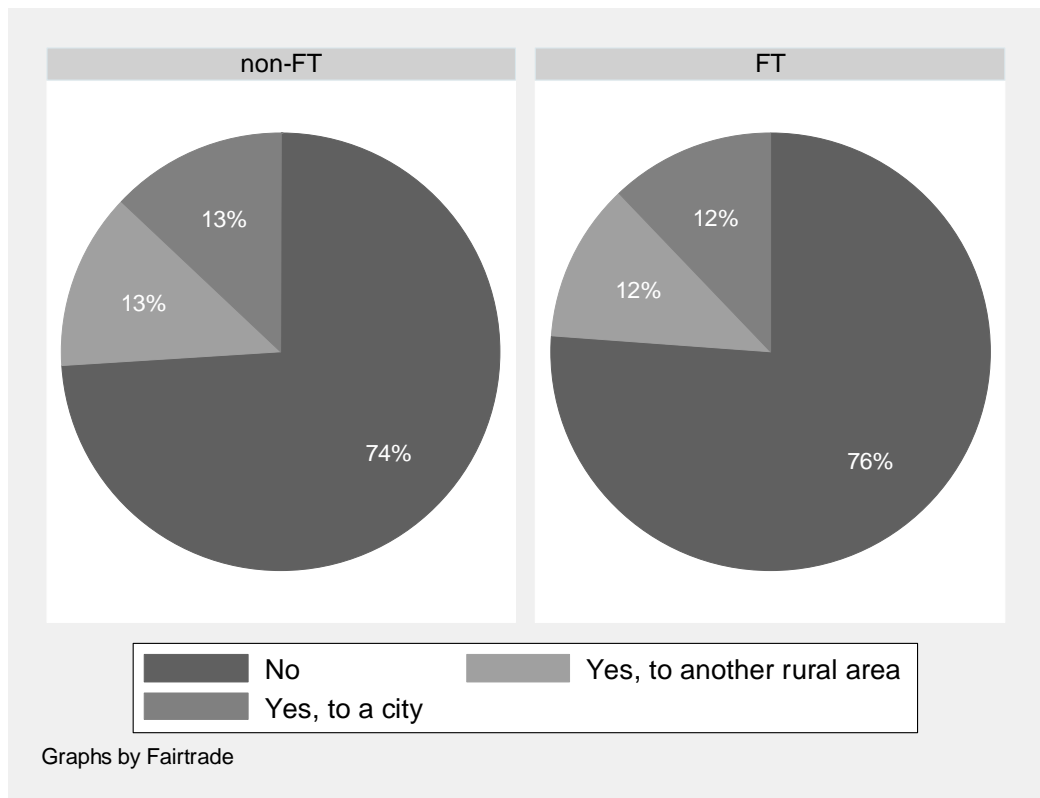
APPENDIX 4.13: TIMING OF WAGE PAYMENT
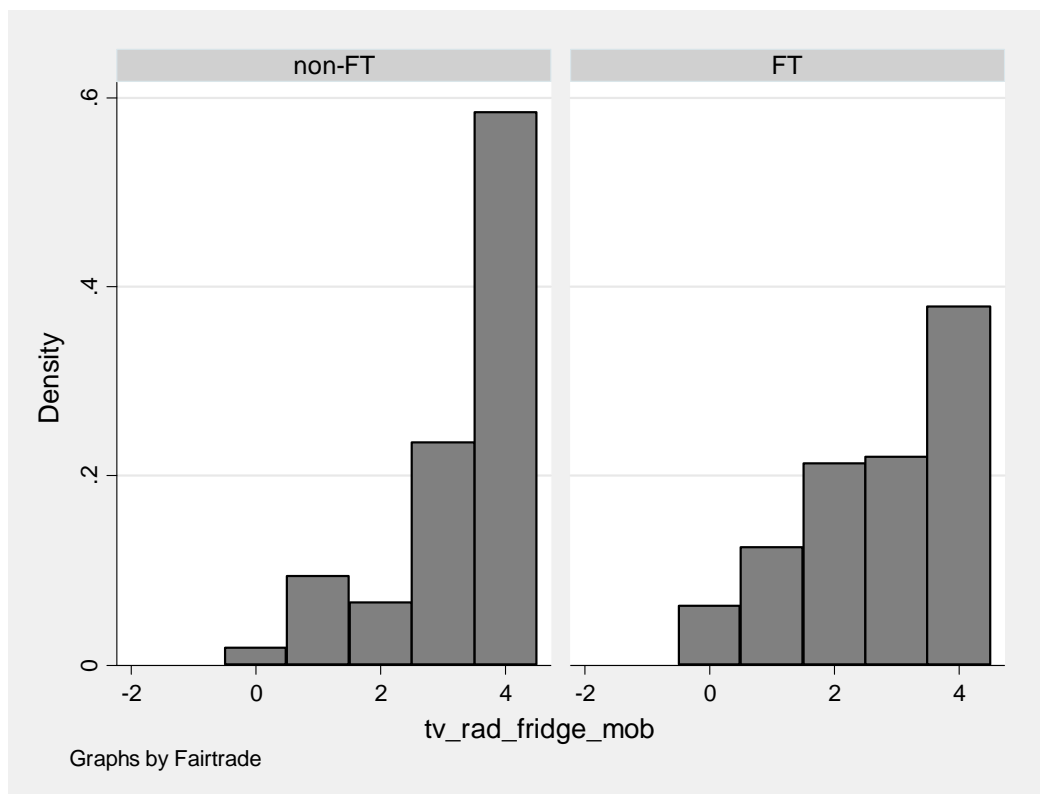
APPENDIX 4.14: WAGE RELATIVE TO MINIMUM WAGE

Graphs by Fairtrade

APPENDIX 4.15: WAGE RELATIVE TO MINIMUM WAGE (EXCLUDING NON-RESPONDENTS)

Graphs by Fairtrade

APPENDIX 4.16: WHETHER THE WORKER HAS CONSIDERED CHANGING EMPLOYMENT

Graphs by Fairtrade

APPENDIX 4.17 OWNERSHIP OF CONSUMER GOODS INDEX

Graphs by Fairtrade

APPENDIX 4.18:ABILITY TO SAVE

	non-FT	FT

No — Less than 5% per month
Between 5% and 10% per month — More than 10%

Graphs by Fairtrade
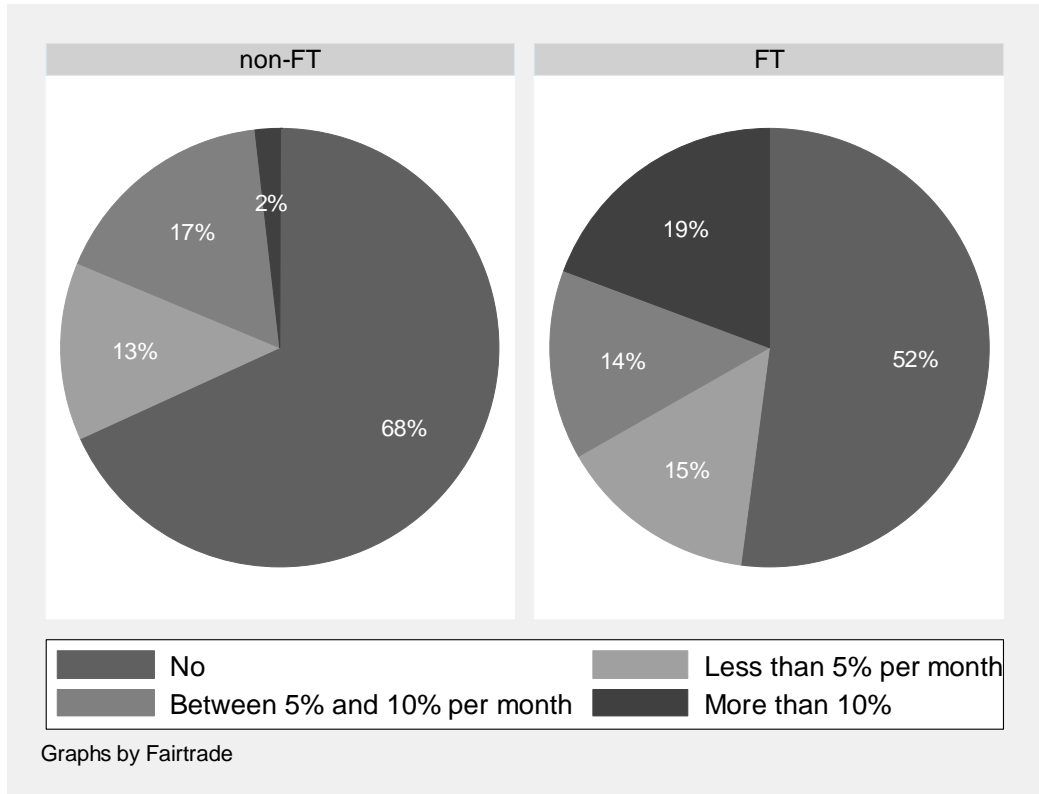
APPENDIX 4.19: HOW SAVINGS ARE MANAGED

	non-FT	FT

At home — Personal Bank Acc
Bank prog run by co-op/farm — Other

Graphs by Fairtrade
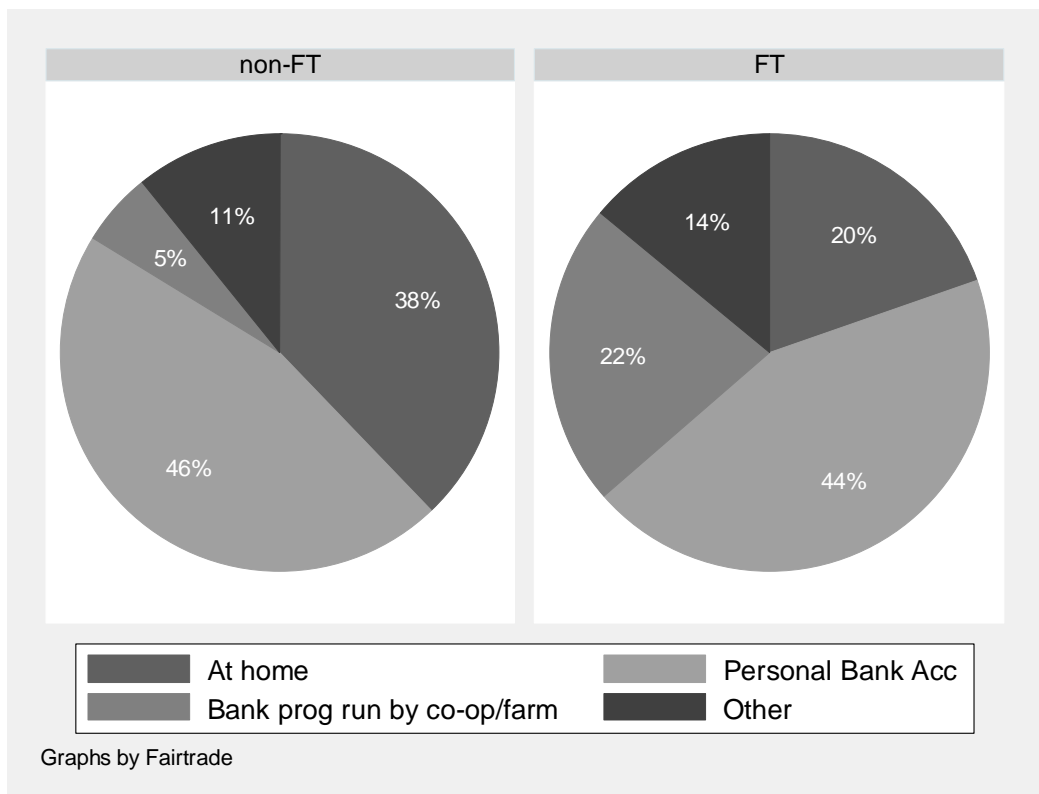
APPENDIX 4.20: WHETHER WORKERS ALWAYS HAVE ACCESS TO SUFFICIENT FOOD

Graphs by Fairtrade
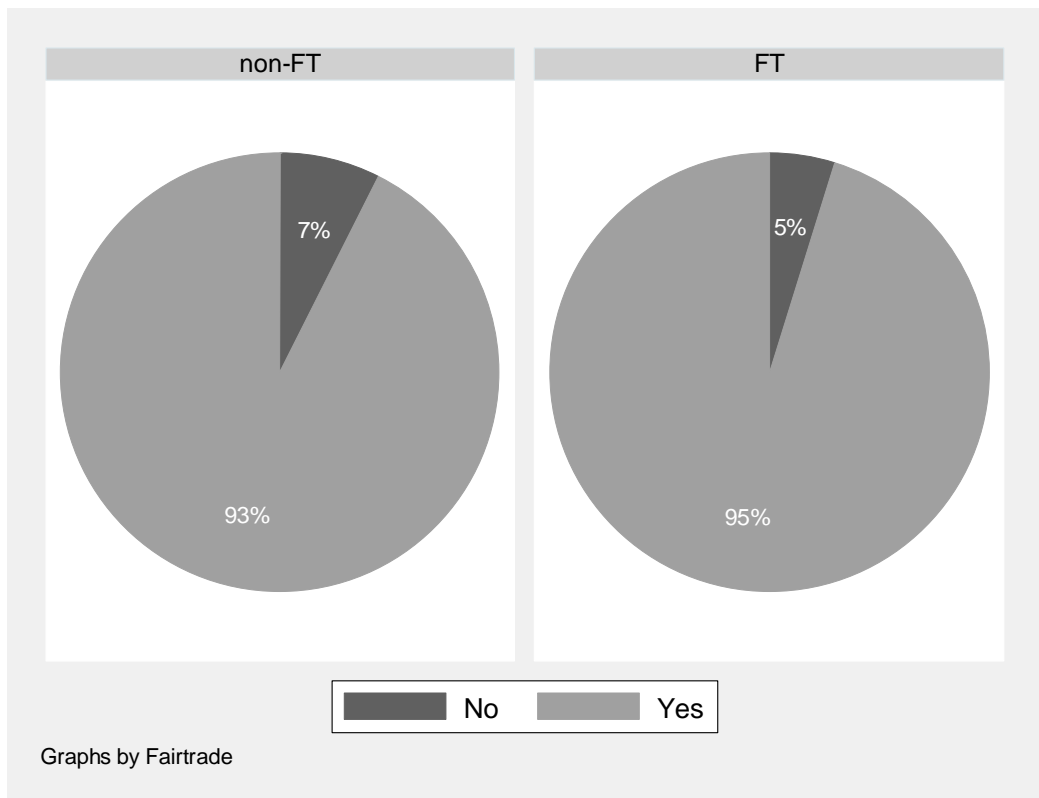
APPENDIX 4.21: RECEIVE SUBSIDISED ACCOMMODATION

Graphs by Fairtrade
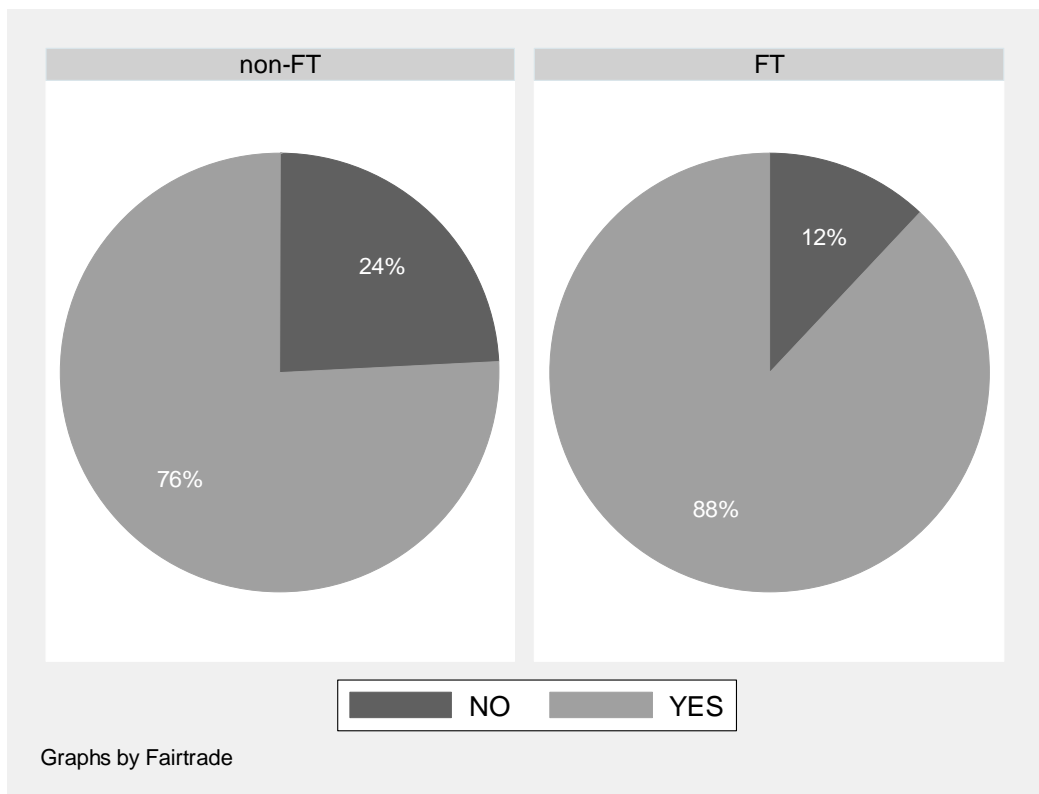
APPENDIX 4.22: PAIR-WISE INDEPENDENCE TESTS: IMMATERIAL WELFARE

Variable	Chi-sq	Spearman Correlation	Kendall tau-b	Polychoric Correlation	Tetrachoric Correlation
Educational achievement	12.5779 (0.028)	-0.1320 (0.0099)	-0.1204 (0.0101)	-0.15218 (0.07063)	
Child mortality	0.3878 (0.533)				0.0674 (0.6403)
Hospital child birth	8.1520 (0.004)				-0.4186 (0.0030)
Hospital child birth – for children <5	2.6340 (0.105)				-0.3841 (0.1882)
Home child birth	5.7752 (0.016)				0.2493 (0.0178)
Home child birth for children < 5	0.0010 (0.975)				-0.0045 (1.0000)
Expected improvement in living standards of children	1.5828 (0.453)	0.0565 (0.3095)	0.0542 (0.3231)	0.1251 (0.5416)	0.1679 (0.2273)
Want your child to remain in farming	1.8652 (0.394)	-0.0255 (0.6463)	-0.0243 (0.6461)	-0.0391 (0.186)	-0.0423 (0.6959)
Withdraw children from education during harvest	8.9057 (0.012)				-0.5417 (0.0024)
Propensity to withdraw child from school	8.9057 (0.012) 3.7322 (0.053)				0.5417 (0.0024) 0.2520 (0.0667)
Access to clinics	1.9350 (0.164)				0.1363 (0.1750)
Access to hospitals	0.6695 (0.413)				0.0759 (0.0917)
Access to visiting doctor	22.2058 (0.000)				0.5191 (0.0000)
Living standards better than parents' living standards	1.9308 (0.381)	0.0418 (0.4178)	0.0411 (0.4175)	0.055 (0.2164)	
Improved living standards over the last 3 to 5 years	28.2390 (0.000)	0.2594 (0.000)	0.2554 (0.000)	0.3818 (0.0185)	

H0 for every test is independence between FT and the stated variable. Correlation coefficients are specified from a fair-trade dummy (ft=1) and the opposing variable is a ranked value which conforms to a standard in which the higher the number the more positive the outcome. Hence, for all but chi-squared, positive numbers imply favouritism towards fair-trade, negative numbers favour the control group. P-values in parentheses.

APPENDIX 4.23 EDUCATIONAL ACHIEVEMENT

Graphs by Fairtrade
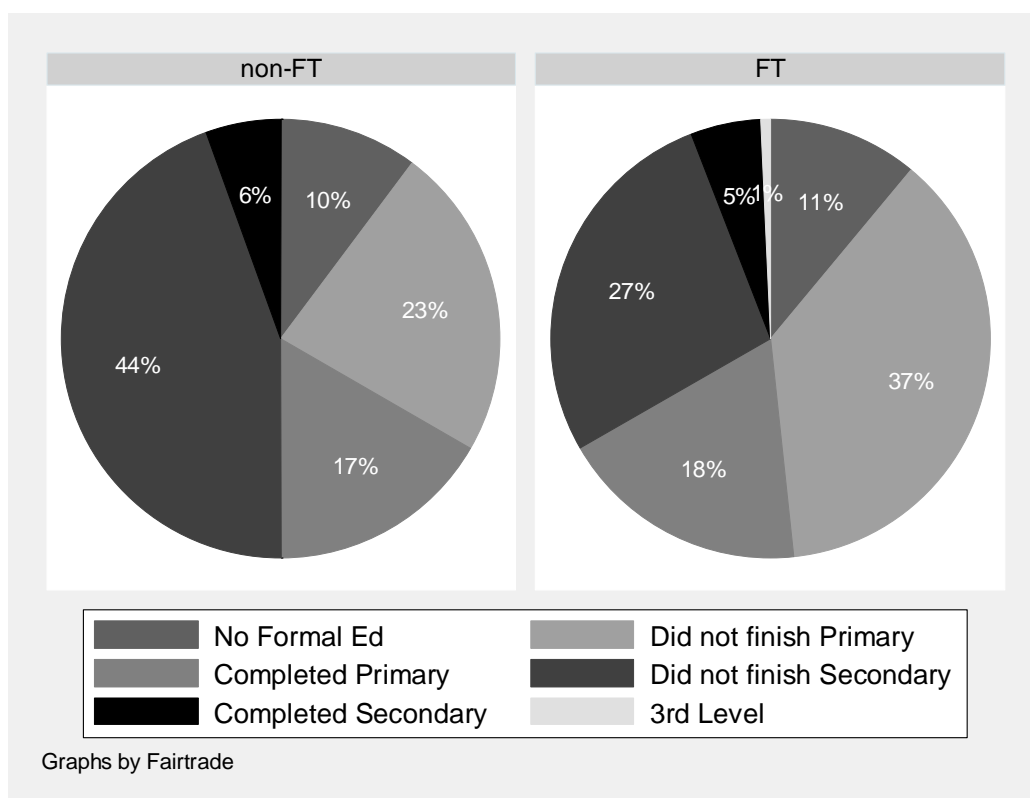
APPENDIX 4.24: INSTANCES OF CHILD MORTALITY

Graphs by Fairtrade
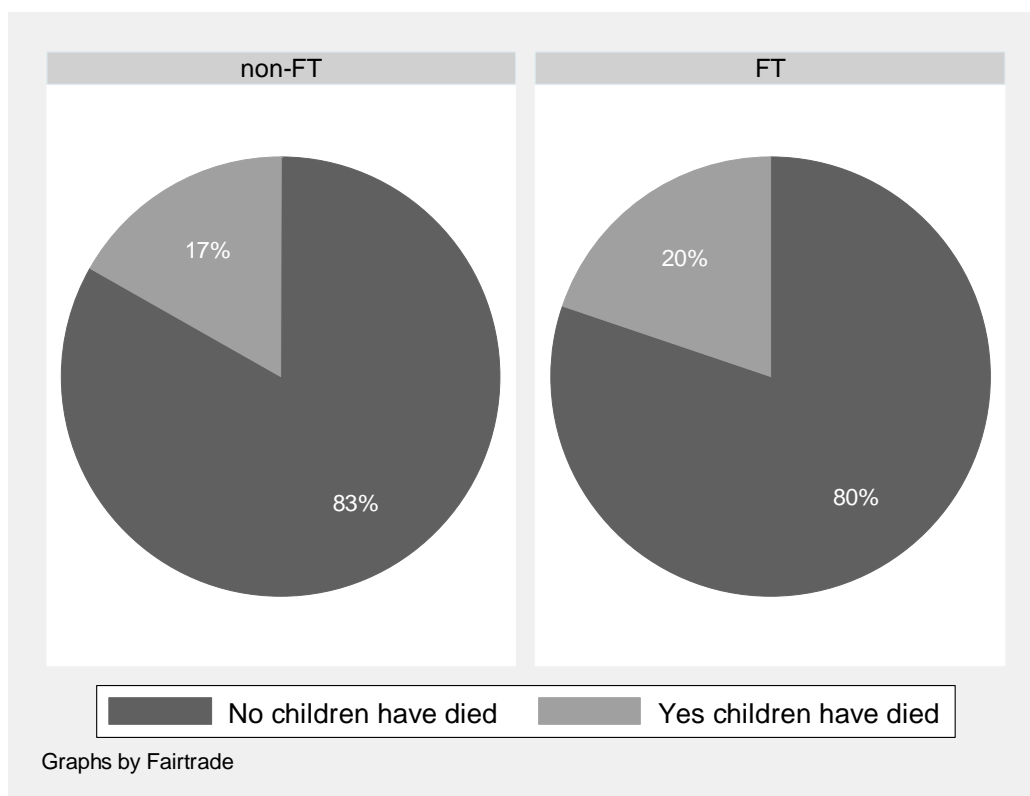
APPENDIX 4.25: EXPECTATIONS OF GENERATIONAL IMPROVEMENT

Graphs by Fairtrade
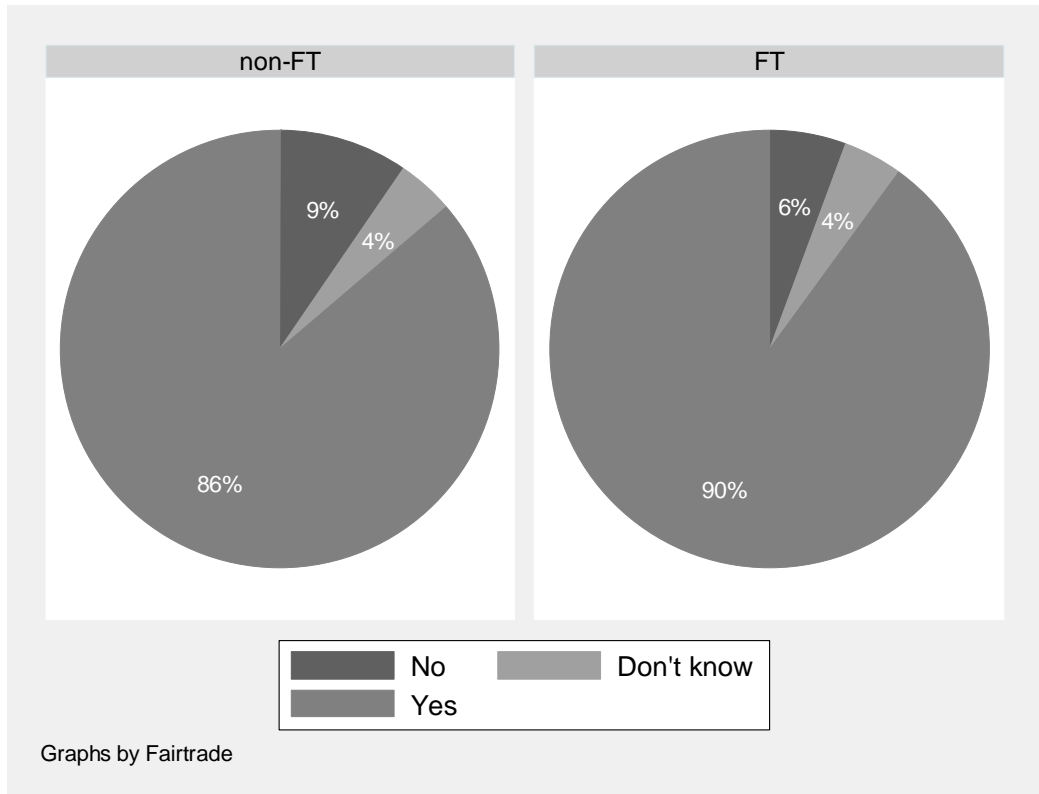
APPENDIX 4.26 DESIRE FOR CHILDREN TO REMAIN IN FARMING

Graphs by Fairtrade
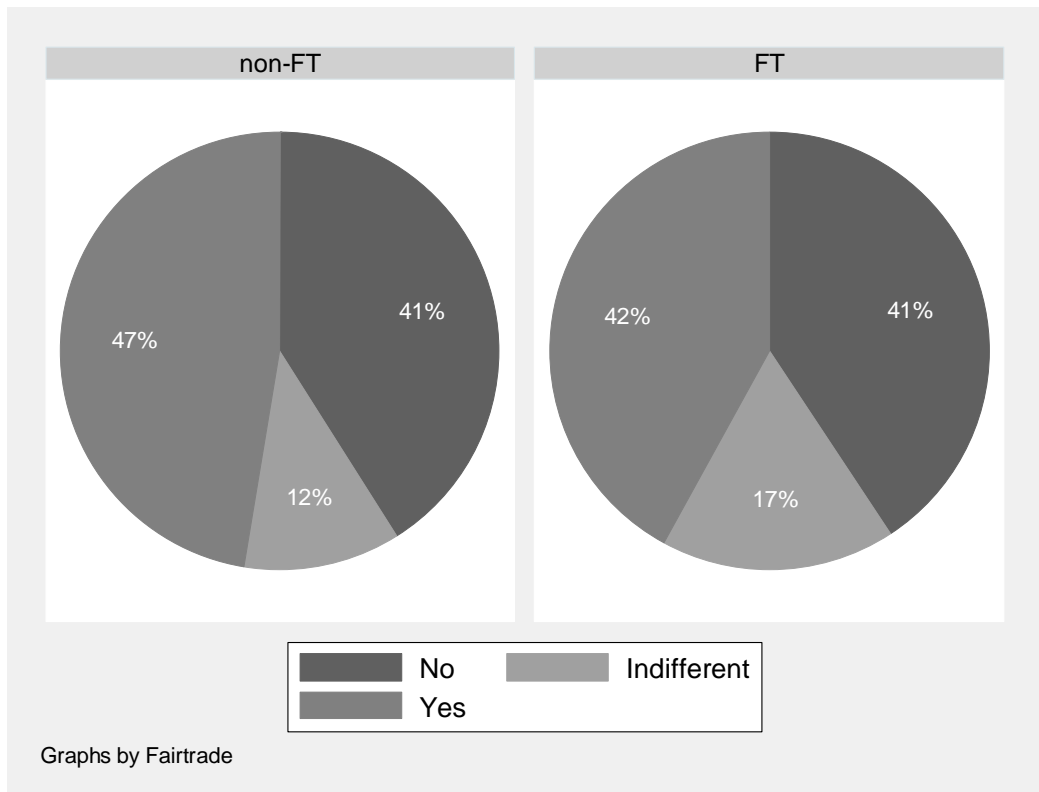
APPENDIX 4.27: WHETHER CHILDREN ARE WITHDRAWN FROM SCHOOL DURING HARVEST TIME

Graphs by Fairtrade
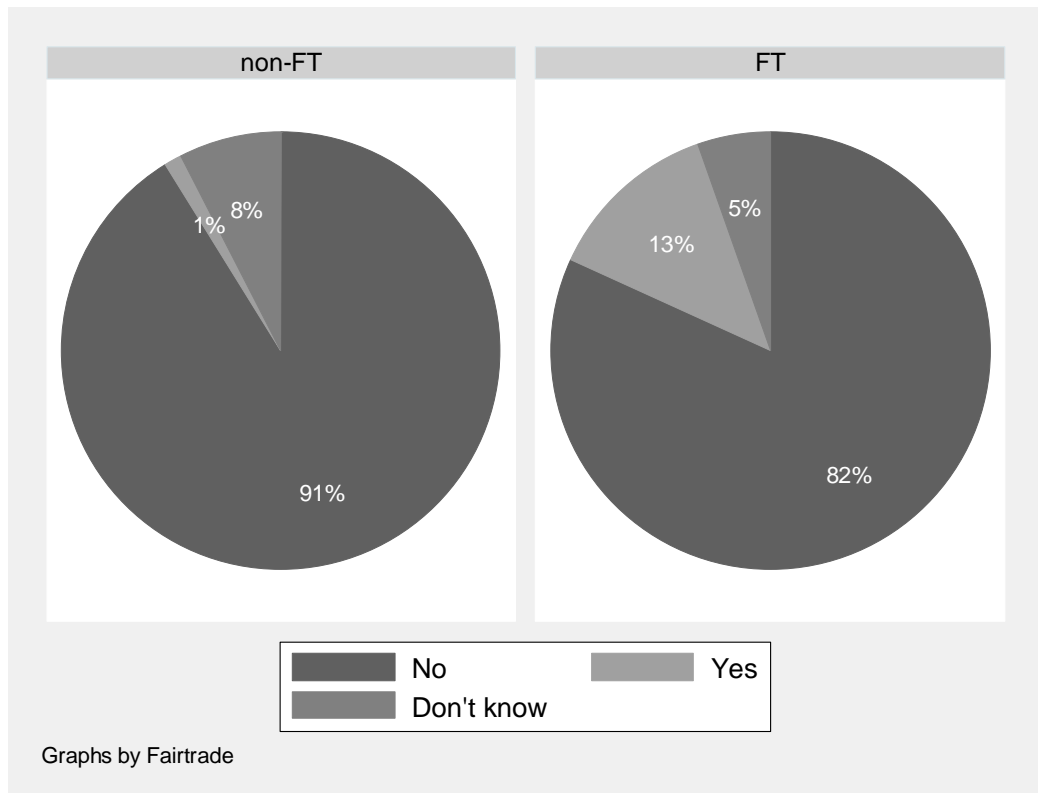
APPENDIX 4.28: ACCESS TO A VISITING DOCTOR

Graphs by Fairtrade
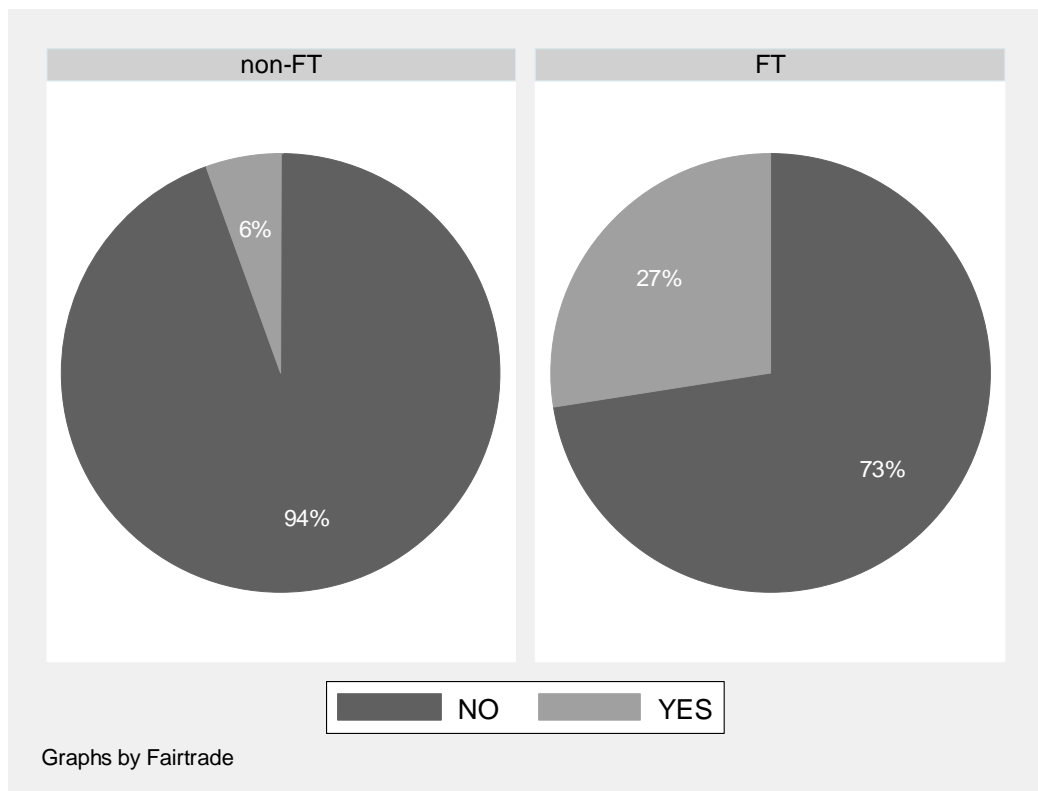
APPENDIX 4.29 LIVING STANDARD IN COMPARISON TO PARENTS

Graphs by Fairtrade
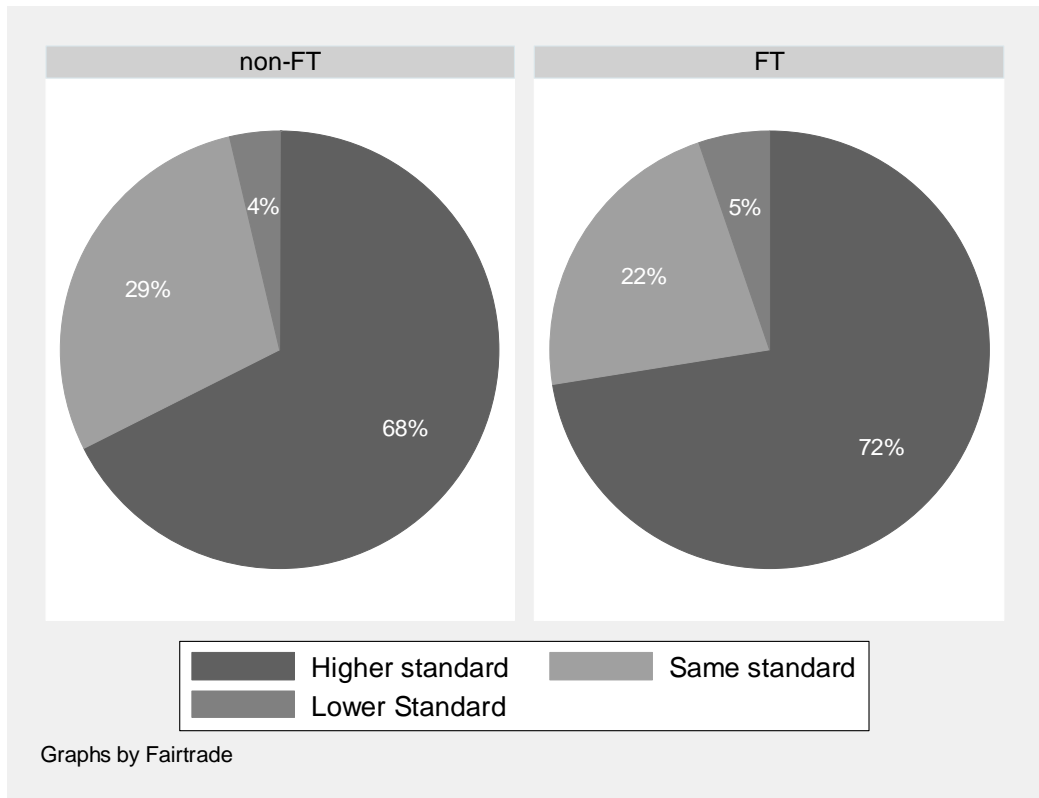
APPENDIX 4.30: CHANGE IN LIVING STANDARD OVER THE LAST 3 TO 5 YEARS

Graphs by Fairtrade
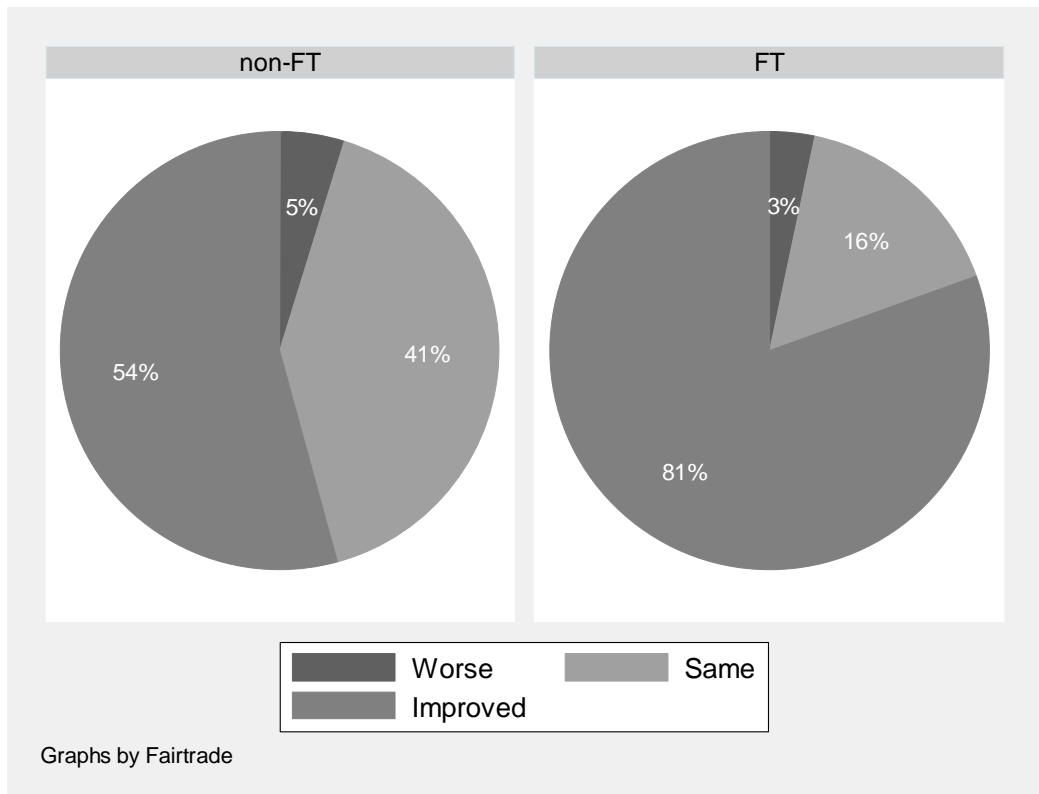
APPENDIX 4.31 ACTIVE AND PASSIVE JOINT-BODY MEMBERSHIP

Graphs by Fairtrade
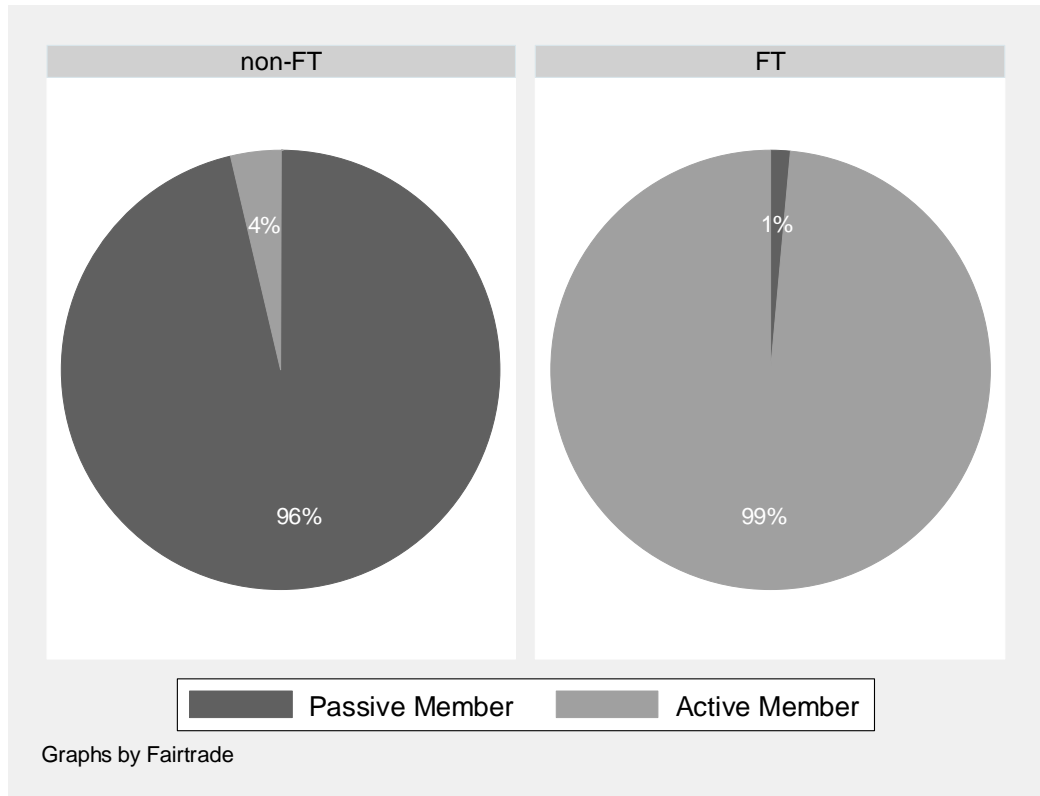
APPENDIX 4.32: INDEPENDENCE TESTS ON FAIR-TRADE AND DEGREE OF PARTICIPATION

Variable	Chi-sq	Spearman Correlation	Kendall tau-b	Polychoric Correlation
Participation within joint-body	83.9153 (0.000)	0.4327 (0.000)	0.3920 (0.000)	0.58982 (0000)

H0 for every test is independence between FT and the stated variable. Correlation coefficients are specified from a fair-trade dummy (ft=1) and the opposing variable is a ranked 1 to 4, conforming to a standard in which 4 is the highest level of participation. Hence positive numbers imply favouritism towards fair-trade, negative numbers favour the control group. P-values in parentheses

APPENDIX 4.33: WHETHER JOINT-BODY MEMBERSHIP IS PERCEIVED TO HAVE A POSITIVE IMPACT ON LIVING STANDARDS

Graphs by Fairtrade
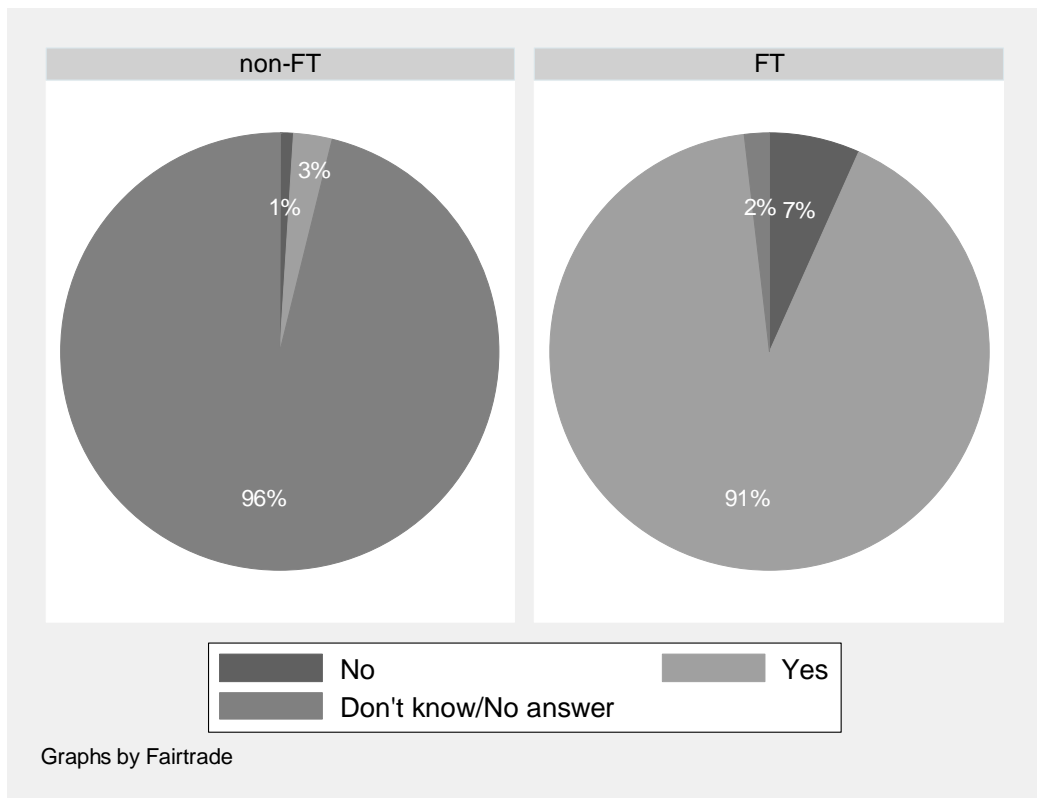
APPENDIX 4.34 ASSISTANCE WITH HEALTH AND/OR EDUCATION

Graphs by Fairtrade
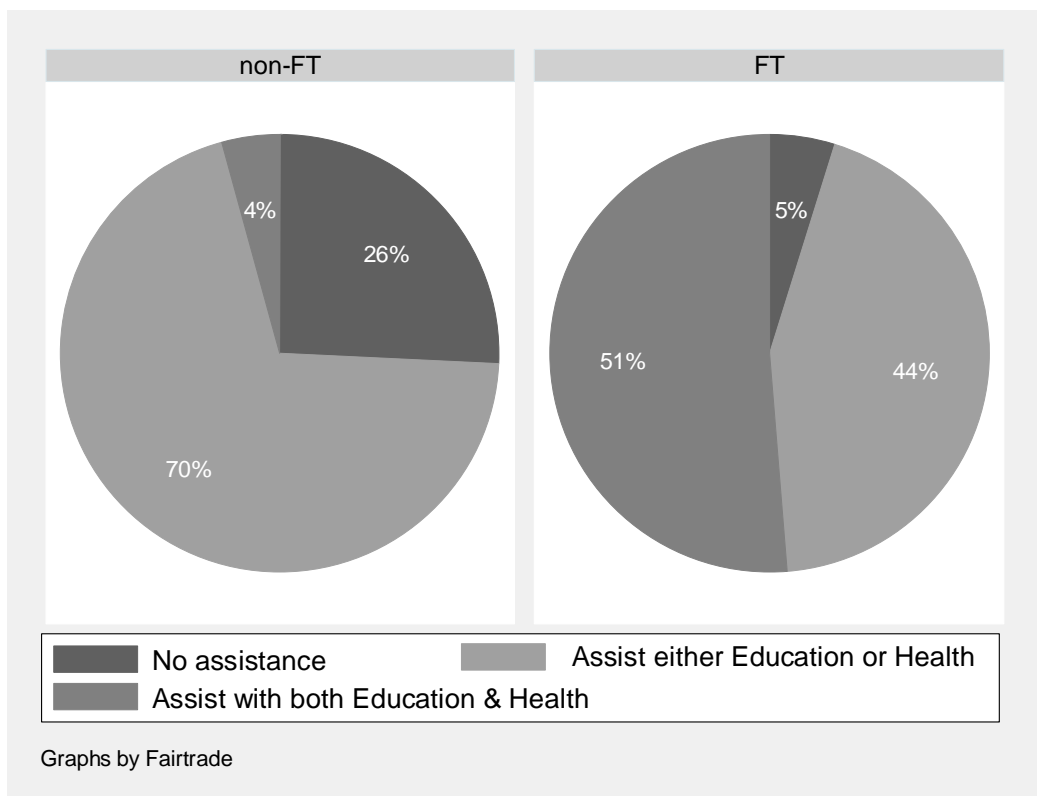
APPENDIX 4.35: OPINIONS ABOUT WHETHER FAIR-TRADE IS 'SPECIFICALLY' RESPONSIBLE FOR AN IMPROVEMENT IN LIVING STANDARDS
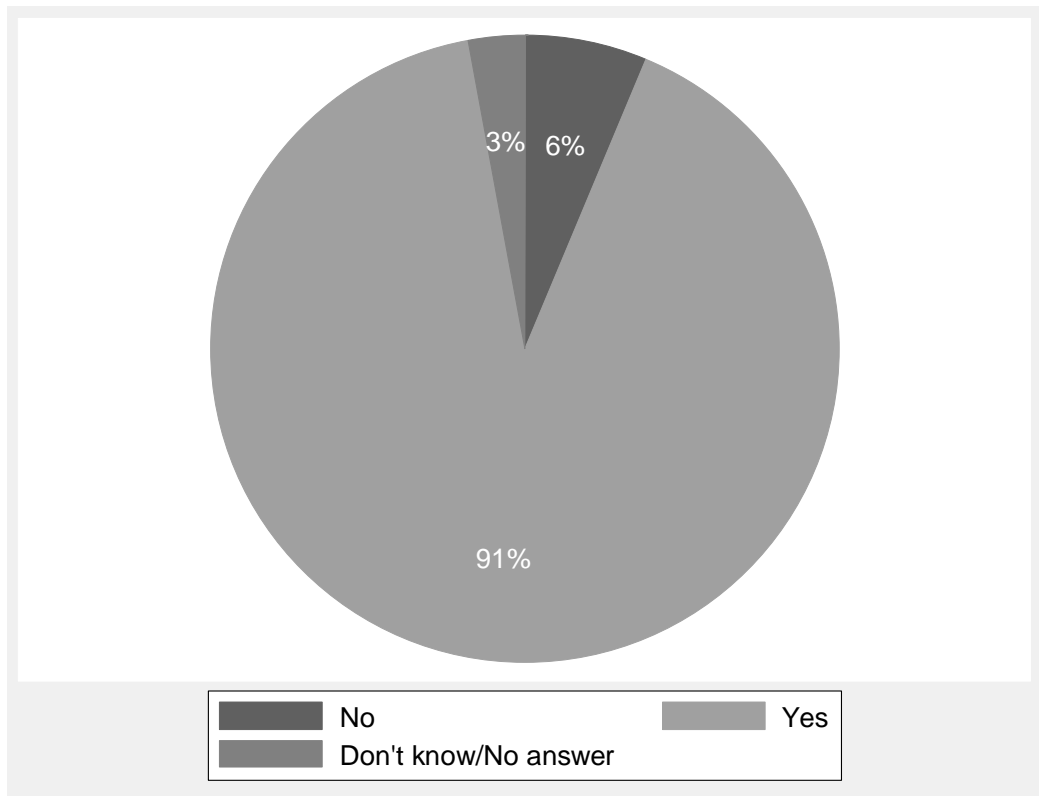
APPENDIX 4.36: WHETHER FAIR-TRADE MAKES SUFFICIENT PROVISIONS FOR COSTS OF LIVING AND FAMILY DEVELOPMENT
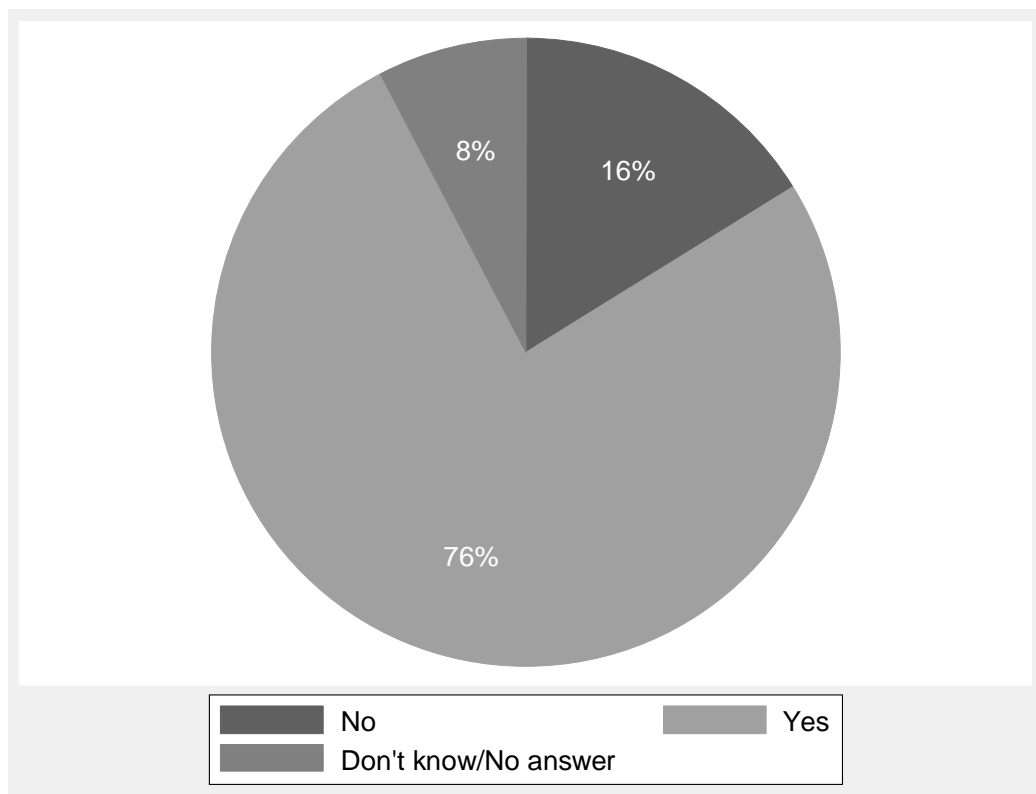
APPENDIX 4.37: EXPECTATION OF BEING ABLE TO REPLY ON FAIR-TRADE TO CONTINUE
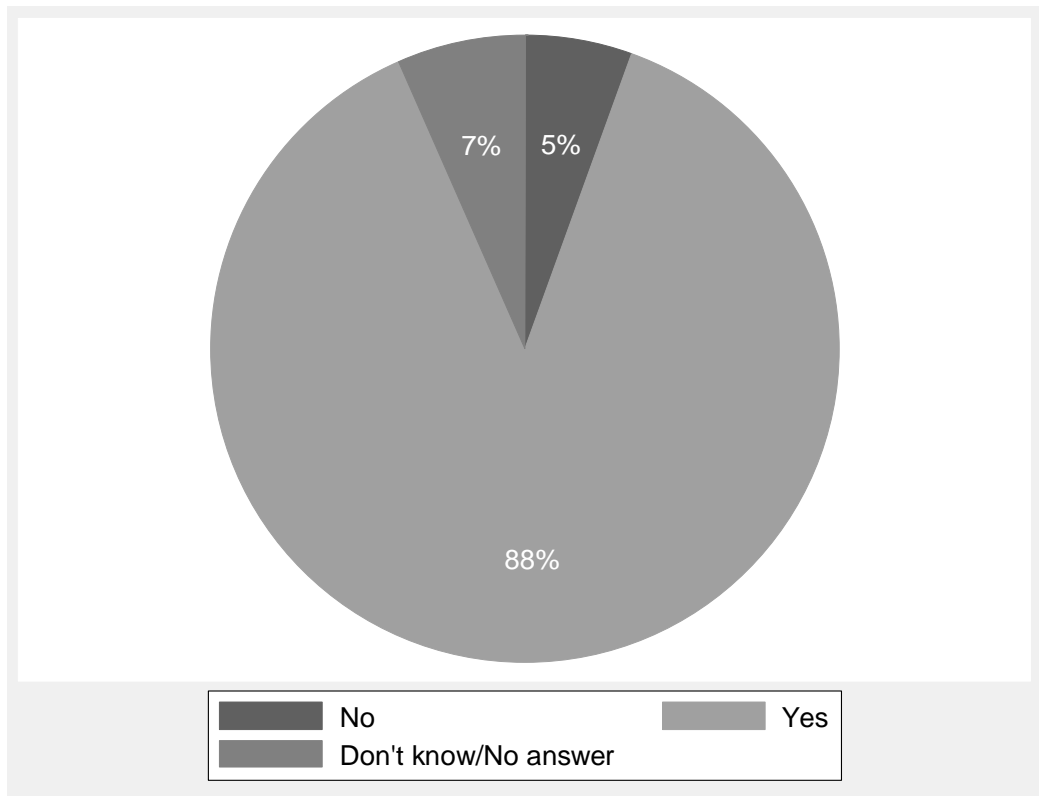
APPENDIX 4.38: IF FAIR-TRADE DID NOT EXIST WHETHER THE WORKER WOULD DIVERT THEIR LABOUR TO DIFFERENT PRODUCTS
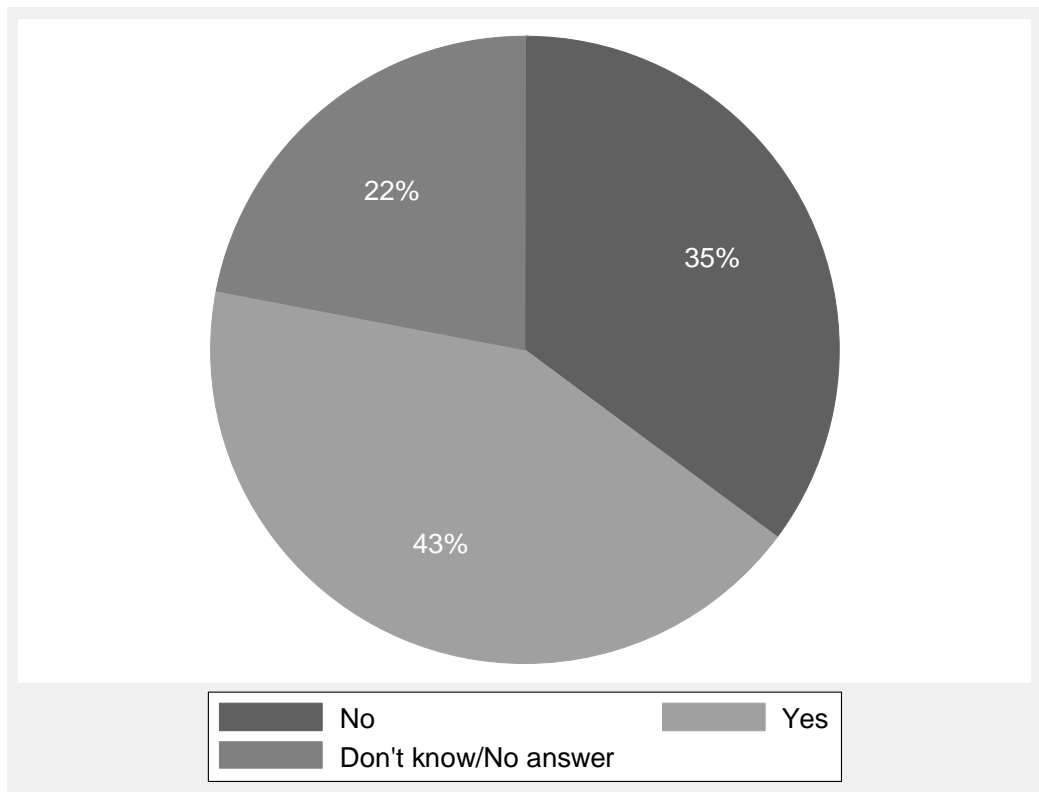
APPENDIX 4.39 HOW PEOPLE FEEL THEIR RECEIVE FAIR-TRADE GAINS
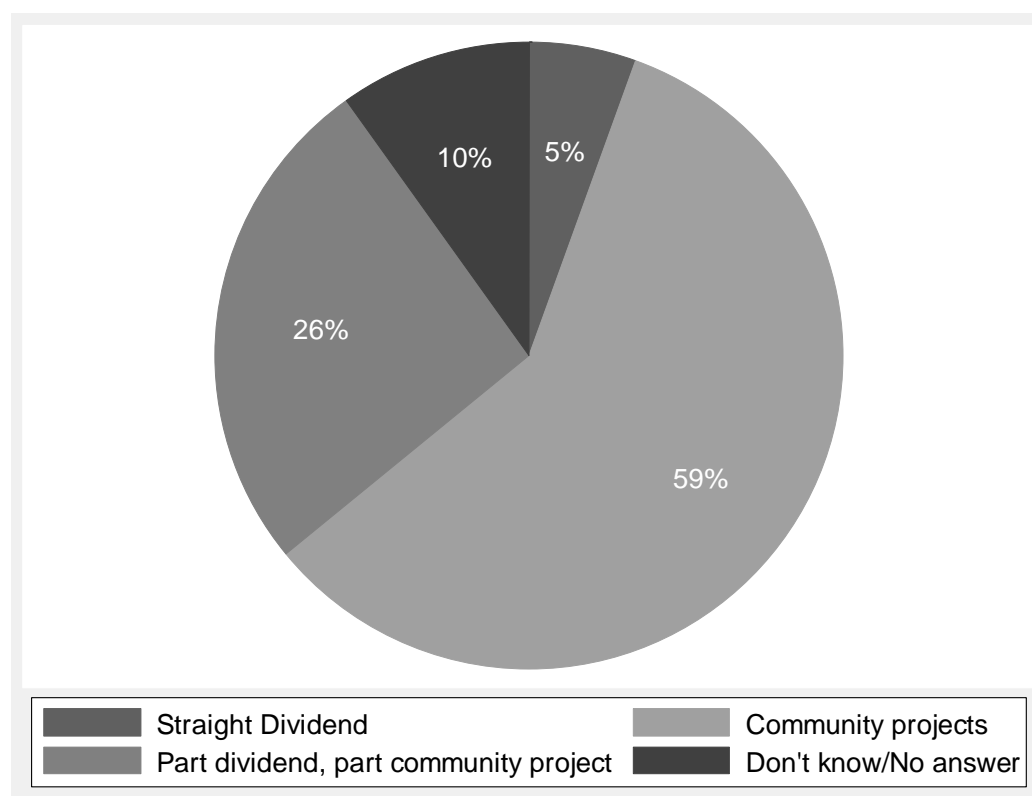
APPENDIX 4.40 RECORDS OF EXPECTED VALUE REPLACEMENTS

Regressions x.2 and x.3

Sick days 1 replacements of 0, median and mode

Food and accommodation 7 replacements
Total sample mean = 0.83
Counterfactual mean = 0.76

Educational assistance 22 replacements
Total sample mean = 0.85
Counterfactual mean = 0.7

Health assistance 22 replacements
Total sample mean = 0.57
Counterfactual mean = 0.222

Household income per capita 1 replacement
Total sample mean = 492
Counterfactual mean = 509

Household expenditure per capita 5 replacements
Total sample mean = 242
Counterfactual mean = 242

Participation index 24 replacements
Total sample mean = 2.38
Counterfactual mean = 1.12

Regressions 2.2 and 2.3

Sick days 1 replacements of 0, median and mode

Food and accommodation 13 replacements
Total sample mean = 0.83
Counterfactual mean = 0.76

Heath and educational assistance 38 replacements
Total sample mean = 1.306
Counterfactual mean = 0.78

Past instances of child mortality 13 replacements
Total sample mean = 0.189
Counterfactual mean = 0.168

Household income 2 replacements
Total sample mean = 2176.564
Counterfactual mean = 2335.604

Household expenditure per capita 9 replacements
Total sample mean = 263
Counterfactual mean = 263

Participation index 36 replacements
Total sample mean = 2.03
Counterfactual mean = 1.0833

Regressions 3.2 and 3.3

Ability to save regularly 1 replacement
Total sample mean = 0.865
Counterfactual mean = 0.52

Voting activity 7 replacements
Total sample mean = 0.707
Counterfactual mean = 0.653

Food and accommodation 7 replacements
Total sample mean = 0.83
Counterfactual mean = 0.76

Food and accommodation 13 replacements
Total sample mean = 0.83
Counterfactual mean = 0.76

Educational assistance 37 replacements
Total sample mean = 0.85
Counterfactual mean = 0.7

Household income per capita 2 replacement
Total sample mean = 573.77
Counterfactual mean = 555.21

Household expenditure per capita 9 replacements
Total sample mean = 263
Counterfactual mean = 263

Participation index 35 replacements
Total sample mean = 2.03
Counterfactual mean = 1.0833

Trust farm 24 replacements
Total sample mean = 0.7848
Counterfactual mean = 0.6987

APPENDIX 4.41 DESCRIPTION OF VARIABLES USED IN THE MODELS

Variable	Description
Age	Continious, respondents age in years.
Sex	Dummy, 0 Female, 1 Male
Co-Hab	Dummy, 0 living alone, 1 co-habiting/married.
Personal Education	Discrete, 0 to 5, increasing value implies increasing level attained.
Sick days	Continuous, cumber of days off work from illness.
Regular savings	Discrete, 1 to 3, increasing value implies.
Future provision	Dummy, 0 no financial provision for the future, 1 some financial provision.
Vote	Dummy, 0 does not vote , 1 person has some democratic voting activity.
Food & Accom	Dummy, 0 nothing provided, 1 food and/or accommodation provided
Organisational support	Descrete, 0, no assistance with either health or education, 1 assistance with either health or education, 2 assistance with both health and education.
Educational support	Dummy, 0 if no educational support is provided, 1 if educational support is provided
Health support	Dummy, 0 if no educational support is provided, 1 if educational support is provided
Child mortality	Dummy, 0 if no instances of child mortality, 1 if instances of CM.
Income per capita	Contentious, value in South African Rand.
Expenditure per capita	Contentious, value in South African Rand.
Financial Assistance	Dummy, 0 if the person receives no financial assistance, 1 if they do.
Participation index	Discrete, 0 to 4, increasing value implies increasing participation.
Farm Trust	Dummy, 0 if the farm generally fails to stand by its promises and obligations, 1 if the farm generally fails to stand by its promises and obligations.
Cease_Farm	Dummy, 0 if person has not considered to cease working on the farm which presently employs them, 1 if they have considered to cease faming on farm that presently employs them.
Permanent	Dummy, 0 seasonal worker, 1 permanent worker.
Animals	Dummy, 0 the person own no farm animals, 1 the person does own.
Fair-Trade	Dummy, 0 no FT, 1 FT.
Child_Farm	Dummy, 0 if the person does not want their child to remain in farming, 1 if the person is not opposed to their child remaining involved in farming.
living_stand35	Dummy, 0 if living standard has not improved over the last 3 to 5 years, 1 of the persons no FT, 1 FT.

APPENDIX 4.42: ODDS RATIOS FOR REGRESSION 1

	Regression 1.1 0dds ratios	Regression 1.2 0dds ratios (sample means)	Regression 1.3 Odds ratios (counterfactual means)
Dependent variable →	Child_farm	Child_farm	Child_farm
Age	0.9521885 (0.029373)	0.946247 (0.0250701)	0.9437253** (0.025062)
Sex	1.959893 (1.265137)	1.60704 (0.7636291)	1.551568 (0.739723)
Co-Hab	0.868294 (0.469869)	0.9389358 (0.4311137)	0.916872 (0.418540)
Personal Education	0.9860876 (0.249179)	1.029878 (0.211072)	1.022643 (0.210311)
Sick days	0.9994154 (0.036690)	1.002773 (0.031180)	1.007361 (0.0307215)
Regular savings	1.136429 (0.253649)	1.279692 (0.250685)	1.315975 (0.260086)
Food & Accom	0.610394 (0.366521)	0.9894914 (0.5057247)	0.8905091 (0.457654)
Educational support	4.394694 (4.07028)	5.613012** (3.913921)	4.406011** (3.042427)
Health support	0.3878126 (0.225299)	0.5936098 (0.2747841)	0.405644* 0.1982046
Child mortality	0.2805321** (0.190039)	(0.492626) .2649227	0.5047363 0.2704308
Income per capita	1.00116 (0.001056)	1.001184 (0.0008577)	1.001013 0.0008277
Expenditure per capita	1.000759 (0.002191)	1.001053 (0.001826)	1.001763 0.0017169
Financial Assistance	2.943078** (1.5508)	1.401959 (0.576525)	1.354217 0.5549254
Participation index	0.9777412 (0.242409)	0.9708141 (0.200329)	1.094818 0.2408471
Cease Farm	0.0883271*** (0.05932)	0.1478837*** (0.071908)	0.1469991*** 0.07181
Permanent	2.437922 (1.96037)	1.248943 (0.756647)	1.322817 0.8050654
Animals	3.107124 (2.174921)	2.245174 (1.239645)	2.359519 1.327548
Fair-trade	0.3791136 (0.28322)	0.2773653** (0.1375526)	0.3105314** (0.1740949)

APPENDIX 3.43 ODDS RATIOS FOR REGRESSION 2

	Regression 2.1 0dds ratios	Regression 2.2 0dds ratios (sample means)	Regression 2.3 Odds ratios (counterfactual means)
Dependent variable →	Cease_farm	Cease_farm	Cease_farm
Age	0.9556768* (0.0244667)	0.946657*** (0.0181446)	0.9469*** (0.0182)
Sex	0.6415065 (0.383134)	1.789757 (0.725492)	1.780194 (0.721998)
Co-Hab	1.822245 (0.9305285)	1.742551 (0.674374)	1.741892 (0.672994)
Personal Education	1.544111* (0.3467837)	1.174677 (0.205721)	1.175298 (0.206077)
Sick days	1.04364 (0.0364992)	1.03588 (0.024387)	1.035011 (0.024304)
Regular Savings	0.9690882 (0.1997168)	0.9888055 (0.159918)	0.9915294 (0.159977)
Future provision	3.826044 5.216731	0.9059954 (0.57601)	0.9395454 (0.598391)
Food & Accom	1.711203 1.127523	1.028691 (0.472177)	1.036539 (0.479260)
Organisational support	0.6176067 (0.2882491)	0.8715029 (0.2824473)	0.8048797 (0.279979)
Child mortality	0.2755423* (0.1990267)	0.5728189 (0.290128)	0.5577421 (0.283740)
Income per capita	0.9996901 (0.000242)	0.9998815 (0.000156)	0.999876 (0.000155)
Expenditure per capita	1.003997** (0.001604)	1.001115 (0.00109)	1.000963 (0.001096)
Financial Assistance	0.4299517** (1.256686)	1.382519 (0.335329)	1.40148 (0.481307)
Participation index	0.8742044 (0.2107221)	1.055719 (0.184262)	0.9537957 (0.178381)
Permanent	3.09024 (2.765838)	1.176199 (0.6299009)	1.148676 (0.324838)
Animals	0.4299517 (0.3105601)	0.6704191 (0.335329)	0.6438441 (0.324838)
Fair-trade	6.365983** (5.048966)	1.251075 (0.534600)	1.518169 (0.738587)

APPENDIX 4.44 ODDS RATIOS FOR REGRESSION 3

	Regression 3.1 0dds ratios	Regression 3.2 0dds ratios (sample means)	Regression 3.3 Counterfactual means
Dependent variable →	living_stand35	living_stand35	living_stand35
Age	0.94388** (0.02411)	0.96032** (0.0177)	0.96022** (0.0177)
Marriage and cohabitation	2.72758* (1.477633)	2.4308** 0.94662	2.44214** (0.9520)
education	0.8876 (0.2123)	0.84112 (0.14911)	0.83348 (0.147782)
Regular Savings	1.44091 (0.37479)	1.17416 (0.21773)	1.17141 (0.21732)
Vote	1.15257 (0.71352)	2.2892** (0.95302)	2.22938* (0.9318)
Food & Accom	0.58158 (0.3805)	-0.06631 (0.36211)	0.76827 (0.3693)
Educational support	1.8662 (1.4678)	2.1895 (1.0621)	2.3766* (0.3693)
Income per capita	0.99859* (0.0008)	0.9995 (0.0005)	0.9995 (0.0005)
Expenditure per capita	1.004095** (0.0020)	1.0011 (0.00122)	1.0011 (0.0012)
Financial Assistance	0.478705 (0.23356)	0.5188179* (0.183836)	0.5049* (0.1798)
Participation Index	1.08352 (0.28235)	0.954074 (0.17100)	0.9659 (0.1724)
Farm Trust	6.7947*** (3.5833)	4.4485*** (1.8467)	4.6095*** (1.91777)
Permanent	0.77176 (0.58449)	1.2847 (0.58402)	1.249792 (0.568198)
Animals	3.8896* (3.1601)	2.3771 (1.3456)	2.42867* (1.38199)
Fair trade	5.2016** (3.22544)	3.6232*** (1.468)	3.32926*** (1.35952)

APPENDIX 4.45 QUESTIONNAIRE (ENGLISH)

QMUL FAIR TRADE PROJECT
Producer Survey

Country	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills
Farmer's ID:	001				

QMUL Fair Trade Project Study
Producer Survey

Country: Argentina
Country ID: 03

Location: Luis Chiaramonte
Location ID: 03

Co-op: Fairhills
Co-op ID: 01

Farmer's ID:	001

INTERVIEWER VISITS

	First			Second		
	dd	mm	yyyy	dd	mm	yyyy
Date:						
INTERVIEWER'S NAME						
INTERVIEWER No.						
Result						

Result Codes: 1 Completed All Questions, 2 Mostly Completed But Declined Some Questions, 3 Postponed Midway, 4 Other

CONSENT

READ TO RESPONDENT:

My name is _____ and I am working for the Queen Mary, University of London, FAIR TRADE Project (QMUL).

We know that some people in the area have access to Fair Trade product markets while others do not, and we are investigating what (if any) impact access to these markets has on the livelihoods and welfare of agricultural producers.

Participation in this survey is voluntary, and if we should come to any question you don't want to answer, just let me know and I will go on to the next question; or you can stop the interview at any time.

We would very much appreciate your participation to help us understand the difficulties you face.
We hope that this information will benefit you by being useful to the organisers of the Fair Trade movement, and other trade associated bodies, such as the various arms of national governments whose WTO votes help to shape international trade environment.

At this time, do you want to ask me anything about the survey?

May I begin the interview now?

Signature of respondent: _____

Date: _____

Respondent Consents (Go to question 1) ☐

Respondent refuses (Terminate interview) ☐

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...ry	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills		
...mer's ID:	001						

About You

No.	Questions	Responses
0	Date	Day Month Year
1	First Name	
2	Surname	
3	Region (Please enter number from list)	
4	Co-operative (Please enter number from list)	
5	Gender	1= Male 2= Female
6	What is your date of birth?	Day Month Year
7	What is your civil status?	1= Single 2= Married 3= Divorced 4= Partner Deceased 5= Co-habiting
8	How many children do you have? (Enter 88 if unknown)	
9	How many people are there in your household (including yourself)? (Enter 88 if unknown)	
10	If you are eligible to do so, do you vote in local, regional and national elections? (Circle all that apply)	A= Not Eligible B= Yes, Regional Elections C= Yes National Elections D= Yes, Local Elections E= No X= Don't know

Children (if you have no children go to Q19)

No.	Questions	Responses
	What are the ages of your children? (Please write the child's age in years in the box)	
11a	1st child (enter 77 if no child, 88 if unknown)	
11b	2nd child (enter 77 if no child, 88 if unknown)	
11c	3rd Child (enter 77 if no child, 88 if unknown)	
11d	4th Child (enter 77 if no child, 88 if unknown)	

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try	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills	
mer's ID:		001				

11e	5th Child (enter 77 if no child, 88 if unknown)	☐☐
11f	6th Child (enter 77 if no child, 88 if unknown)	☐☐
11g	7th Child (enter 77 if no child, 88 if unknown)	☐☐
12	Where were your children born? (Circle all that apply)	A= At Home, B= In a clinic, C= In a hospital. D= Other. X= Don't know
13	Have any of your children died from illness? (Circle all that apply)	A= No B= Yes, at birth C= Yes, within their first year D= Yes, between the 2nd and 5th year E= Yes, after the fifth year X= Don't know
14	If you have any children who are aged 5 to 12, how many days a week do they attend school? (If you have no children of that age, enter N/A)	0= 0 1= 1 2= 2 3= 3 4= 4 5= 5 6= 6 7= 7 77= N/A 88= Don't know
15	If you have any children who are over the age of 12, how many days a week do they attend school? (If you have no children of that age, enter N/A)	0= 0 1= 1 2= 2 3= 3 4= 4 5= 5 6= 6 7= 7 77= N/A 88= Don't know
16	During the harvest period do you withdraw any of your children from school so as to participate in work	0= No 1= Yes 2= Yes, but not those 12 or under 8= Don't know
17	Would you like your children to stay involved in farming?	0= No 1= Yes 2= Indifferent 8= Don't know

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try	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills
mer's ID:	001				

11e	5th Child (enter 77 if no child, 88 if unknown)	□□
11f	6th Child (enter 77 if no child, 88 if unknown)	□□
11g	7th Child (enter 77 if no child, 88 if unknown)	□□
12	Where were your children born? (Circle all that apply)	A= At Home, B= In a clinic, C= In a hospital. D= Other. X= Don't know
13	Have any of your children died from illness? (Circle all that apply)	A= No B= Yes, at birth C= Yes, within their first year D= Yes, between the 2nd and 5th year E= Yes, after the fifth year X= Don't know
14	If you have any children who are aged 5 to 12, how many days a week do they attend school? (If you have no children of that age, enter N/A)	0= 0 1= 1 2= 2 3= 3 4= 4 5= 5 6= 6 7= 7 77= N/A 88= Don't know
15	If you have any children who are over the age of 12, how many days a week do they attend school? (If you have no children of that age, enter N/A)	0= 0 1= 1 2= 2 3= 3 4= 4 5= 5 6= 6 7= 7 77= N/A 88= Don't know
16	During the harvest period do you withdraw any of your children from school so as to participate in work	0= No 1= Yes 2= Yes, but not those 12 or under 8= Don't know
17	Would you like your children to stay involved in farming?	0= No 1= Yes 2= Indifferent 8= Don't know

.try	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills	
.mer's ID:	001					

No.	Questions	Responses
18	Do you expect your children will eventually have a higher standard of living than you?	0= No 1= Yes 8= Don't know

Living Conditions

No.	Questions	Responses
19	What do you feel has happened to your standard of living over the last 3-5 years?	1= Improved 2= Stayed the same 3= Gotten Worse 8= Don't Know
20	How much formal education did you receive? (Circle the highest level)	0= No formal education 1= Started but did not complete Primary School 2= Completed Primary School 3= Started but did not complete Secondary school 4= Completed secondary school 5= 3rd level 8= Don't Know
21	Do you feel that you have achieved a higher standard of living than your parents?	0= No, I have a lower standard 1= Yes, I have a higher standard 2= No, roughly the same standard, 8= Don't Know
22	Do you always have enough food?	0= No 1= Yes 8= Don't Know
23	When you are ill, what options are available to you? (Circle all that apply)	A= Clinic B= Hospital C= Visiting Nurse D= Visiting Doctor E= Family care or Treat yourself at home X= Don't Know
24	In the last year how many days of work have you lost from illness? (Enter 888 if unknown)	☐ ☐ ☐
25	Does your home have a source of power? (Circle all that apply)	A= None B= Yes, Electricity, all day C= Yes, Electricity, but not all day D= Solar Power E= Yes, Gas F= Yes, Oil G= Yes, LPG H= Yes, Paraffin X= Don't Know

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.try	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills
.mer's ID:	001				

26	Which of the following do you own? (Circle all that apply)	A= Bicycle B= Motorcycle C= Car D= Radio E= Television F= Fridge G= Mobile Phone H= Tractor N= None of these

Income

No.	Questions	Responses
27a	On average what is your total monthly household income? (Enter Rands) (Allow 888888 for unknown)	☐☐☐☐☐☐
27b	Do you receive a payslip?	0= No 1= Yes
27c	What is your personal monthly income?	☐☐☐☐☐☐
28	How much does it typically cost your household for food and housing in a single month? (Enter Rands) (Allow 888888 for unknown)	☐☐☐☐☐☐
29	Apart from farming, do you have any other sources of regular income?	0= No 1= Yes
30	Does your income allow you to save on a regular basis?	0= No 1= Yes, Less Than 5% A Month 2= Yes, More Than 5% And Less Than 10% 3= Yes, More Than 10% 8= Don't Know
31	How do you typically keep the money that you save? (Circle all that apply)	1= At Home 2= A personal Bank account 3= A bank program ran by your co-operative or farm. 4= Other
32	Do you pay any of the following taxes or contributions (Circle all that apply)	A= Income taxes B= Indirect Taxes C= Property Taxes D= Social Security Contribution E= Pension Contribution F= Insurance Contribution G= No X= Don't Know

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try	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills
mer's ID:		001			

33	Are you taxed on your income?	0= No 1= Yes, around 5 – 10% 2= Yes, around 11 - 20% 3= Yes, around 21 - 30% 4= Yes, around 31 - 40% 5= Yes, around 41 -50% 6= Yes, around 51-60% 7= Yes, around 61 - 70% 8= Yes over 70% 88= Don't Know
34	Do you receive any external financial assistance? (Circle all that apply)	A= No B= Yes, Charitable Donations C= Yes, Government Grants D= Yes, Subsidised Loans X= Don't Know
35	Have you had to borrow any money in the last 3 years? (Circle all that apply)	A= No B= Yes, From Friends Or Relatives C= Yes, From A Bank D= Yes, From A Private Money Lender E= Yes, From Community Or Co-Operative Funds F= Yes, From An NGO

Farming

No.	Questions	Responses
36	Do you own any land. (Circle all that apply)	A= No, I don't own any land B= Yes, small agricultural plot C= Yes, house D= Yes, farm X= Don't know
38	If you own any Land, has any of you land been directly inherited?	A= No, I don't own any land B= Yes, small agricultural plot C= Yes, house D= Yes, farm X= Don't know
39	Are you a permanent or seasonal worker?	1= Seasonal Worker 2= Permanent Worker
40	Which of the following options best describes your wage	0= N/A 1= Less than the minimum wage 2= The minimum wage 3= More than the minimum wage
41	Does the farm you work on provide you with food and accommodation?	0= No 1= Yes, food only 2= Yes, accomodation only 3= Yes, food and accomodation

ıtry	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills
ɪmer's ID:	001				

42	Which of following animals do you own? (Circle all that apply)	A= None B= Chickens C= Cows D= Pigs E= Sheep F= Horses G= Donkeys H= Goats
43	Do you use any chemicals in your farming?	0= No 1= Yes 8= Don't Know
44	Do you sell any certified organic products?	0= No 1= Yes 8= Don't Know
45	Do you make use of farming technology and techniques that were not available to your parents?	0= No, my way of farming is much the same as theirs 1= Yes 2= My Parents were not involved in Farming 8= Don't Know
46	Have you ever seriously considered ceasing to work your farm and relocate for reasons of work?	0= No 1= Yes, to another rural areas 2= Yes, to a City
47	Have you been seriously injured at work?	0= No 1= Yes 8= Don't Know

Commodity

No.	Questions	Responses
48	Roughly what proportion of your entire farming is dedicated to your primary product?	0= Less than 30% 1= 30 - 40% 2= 40 - 50% 3= 50 - 60% 4= 60 - 70% 5= 70 - 80% 6= 80 - 90% 7= Over 90% 8= Don't Know
49	Do you think too many people rely on growing your primary product in your community?	0= No 1= Yes 8= Don't Know
50	What would your monthly wage have to fall to in order for you abandon your current employment?	☐☐☐☐☐☐
51	If your wage fell below what you answered above, what would you do?	1= Try to farm another product 2= Change occupation away from farming 3= Migrate to another region and farm 4= Don't Know

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ntry	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills
rmer's ID:		001			

52	Do you ever have left over primary product that you wished to sell but did not sell?	0= No 1= Yes 8= Don't Know
53	To which of the following do you sell the majority of your primary product	1= Co-operative 2= Agricultural Market 3= Middlemen 4= Cellar
54	Do you sell any proportion of your primary product to middlemen?	0= No 1= Yes, Less Than 5% 2= Yes, 5 - 10% 3= Yes, 15 - 20% 4= Yes, 20 – 25% 5= Yes, 25-49% 6= Yes, 50-80% 7= Yes, 80-100% 8= Don't Know
55	Do you generally prefer to avoid selling your primary product to middle men?	0= No 1= Yes 3= Indifferent
56	Which of the following statements are accurate for middlemen? (Circle all that apply)	A= They generally offer a lower price. B= The pay in advance C= They pay on the spot D= You generally prefer to avoid selling to them X= Don't Know
57	Do you have to travel to sell your primary product?	0= No 1= Yes, less than 5 km 2= Yes, 5 - 10 km 3= Yes, between 10 - 15 km 4= Yes, 15 - 20 km 5= Yes, more than 20 km 8= Don't Know
58	What is the timing in which you generally receive your wages?	1= In advance 2= On time, as soon as the work is complete 3= There is generally a delay 8= Don't Know
60	What technology do you currently use to help grow and harvest your products? (Circle all that apply)	A= Farm animals, such as cow or horse B= Spade and fork C= Tractor D= Cultivator E= Fertiliser F= Water system to irrigate fields G= Mobile phone for communication H= None of the above X= Don't know

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₁try	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills	.
₁rmer's ID:	001					

Co-operative. □*IF THEY ARE NOT A MEMBER OF A CO-OPERATIVE GO TO Q72*

No.	Questions	Responses
63	Are you a member of a co-operative?	0= No 1= Yes
64	How many years have you been a member of a co-operative? (Enter 88 if not known)	☐☐
65	Do you think you would receive a lower price if you were not a member of a co-operative?	0= No 1= Yes 8= Don't Know
66	In which of the following ways do you participate in the functioning of you co-operative? (Circle all that apply)	A= Act as a representative B= Voting for a representative C= Occasionally attend meeting D= Participate in discussions E= No participation,
67	Do you have confidence in the governance of your co-operative?	0= No 1= Yes 8= Don't Know
68	Do you believe your standard of living has improved since you joined the co-operative?	0= No 1= Yes 8= Don't Know
69	Have you ever received any of the following from your co-operative/farm? (Circle all that apply)	A= Technical assistance (tools and machinery) B= Occupational Training C= Loans D= No, none of these X= Don't Know
70	If when selling to your co-operative/farm, you sign contracts in advance, does the co-operative/farm always meet its contractual obligations?	1= Contracts are not signed in advance 2= Yes, it always meets its obligations 3= No, sometimes it fails to meet its obligations 8= Don't Know
71	Does your co-operative/farm contribute financially to any of the following? (Circle all that apply)	A= Local Schools B= Local Health Facilities C= None of these X= Don't Know

Trade Specific

No.	Questions	Responses
72	Are you a member of a Fair Trade co-operative?	0= No 1= Yes
73	For how many years have you been selling to Fair Trade? (Enter 88 is not known)	☐☐

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.try	Argentina	Location	Luis Chiaramonte	Co-op	Fairhills
.mer's ID:	001				

74	Roughly what proportion of your [primary product] do you sell as Fair Trade?	1= Less than 5 % 2= 5 - 10% 3= 10 - 15% 4= 15 - 20% 5= 20 - 25% 6= 25 - 30% 7= 30 - 35% 8= 35 - 40% 9= 45 - 50% 10= Over 50% 88= Don't Know
75	Do you feel Fair Trade has raised your standard of Living?	0= No 1= Yes 8= Don't Know
76	Do you think the Fair Trade price sufficiently takes into account your costs of living and family development?	0= No 1= Yes 8= Don't Know
77	Do you feel you can rely on the extra income from FT to continue into the foreseeable future?	0= No 1= Yes 8= Don't Know
78	Since you began selling Fair trade, the volume of your conventional sales have	0= Fallen 1= Remained Constant 2= Increased 8= Don't Know
79	If Fair Trade did not exist would you still grow the same amount of your primary product?	0= No 1= Yes 8= Don't Know
80	How do you receive the gains from Fair Trade?	1= Directly as a straight dividend 2= The co-operative invests in community project 3= Part of it you receive directly, part of it gets invested in community projects 8= Don't Know

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