STYLE STRATEGIC TRANSITIONS FOR YOUTH LABOUR IN EUROPE

D 9.2 - Youth unemployment and social capital: An experimental approach

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STYLE-WP9: Vulnerable Voices and Cultural Barriers

Version - Final

Submission date   **Planned: 31/12/2015**   **Actual: 23/12/2015**

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i)   to 'advance the knowledge base that underpins the formulation and implementation of relevant policies in Europe with the aim of enhancing the employment of young people and their transition to economic and social independence', and

ii)   to engage with 'relevant communities, stakeholders and practitioners in the research with a view to supporting employment policies in Europe.' Contributions to a dialogue about these results can be made through the project website www.style-research.eu, or by following us on twitter @STYLEEU.

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Acknowledgements

Executive Summary

This paper seeks to identify the systematic effect of individuals' labour market status on their behavioural trust and trustworthiness. Furthermore, the main treatment of the experimental design seeks to test the extent to which – and in which direction - subjects' trusting and trustworthy behaviour is affected by the information on the labour market status of their counterpart.

We implement two one-shot trust games with random and anonymous matching: in the first game, subjects receive no information on the counterpart; in the second one, the labour market state of both players is common knowledge. We implement a dictator game and individual decision problems (i.e. lottery choice) to control for other motivational factors such as unconditional preferences (i.e. altruism and inequity aversion) and attitude towards risk that might affect trusting and trustworthy behaviour. Moreover, we combine survey and behavioural data to pursue two main objectives: first, we explore whether behavioural trust and trustworthiness are systematically affected by subjects' socio-economic characteristics; second, we want to test whether subjects' answers to attitudinal questions on trust, cooperation and reciprocity are predictive of their trusting and trustworthy behaviour.

The analysis produces various interesting results as well as suggesting a number of possible avenues for further investigation. We find in the first place statistically significant differences in behaviour – of both senders and recipients in the trust game – across countries and across labour market states. Econometric analysis allows us to qualify this basic observation, and in particular demonstrates the importance of distinguishing amongst different types of NEET.

A second major finding is the importance of precariousness in employment in its deleterious effects on behavioural trust. Concerns have regularly been voiced in recent years about the negative effects of the increasing prevalence of temporary employment forms on young people's early labour market experiences and the results presented here appear to strongly support these concerns. Temporary employment appears to be at least as damaging to behavioural trust as unemployment, adding further support to those who would question the ever increasing flexibilization of youth labour markets.

On the other hand, the findings are in line with – and throw light on - some of the other findings in the behavioural economics literature. In terms of the impact of unemployment on behaviour, there are quite striking similarities in the results presented here and those of Fehr et al. (2003) which analysed working age adults in Germany.

Key words:

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Abbreviations

DG	Dictator Game
HU	Hungary
IT	Italy
NEET	Not in Employment, Education or Training
NLFET	Neither in the Labour Force nor in Education or Training
OLS	Ordinary Least Squares
STW	School to Work
TG	Trust Game
UK	United Kingdom
VET	Vocational Education and Training

1. Introduction

1.1 Background

The analysis presented here has its origins in a number of different lines of research primarily from labour economics but also covering experimental economics.

First, there is a relatively long tradition in labour economics looking at the question of whether unemployment and other forms of NEET – sometimes called NLFET (Not in the Labour Force, Education or Training[1]) - are behaviourally different states. Early work on labour market transitions suggesting that unemployment and NLFET were not substantively different states; specifically, Clark and Summers (1979) found a high rate of transition between unemployed and out of the labour force status. These findings led them to conclude that "many of those classified as not in the labour force are functionally indistinguishable from the unemployed." Flinn and Heckman (1982, 1983) were fairly quick to question the validity of these conclusions in their seminal work on the subject and a few more recent analyses (e.g. Jones & Riddell, 2000, Brandolini et al., 2004, Battistin et al., 2007) have thrown further light on this issue. Overall, researchers have indeed found behavioural differences between the unemployed and some of the NLFET although the analyses differ in exactly where they suggest in drawing the line between labour force participants and non-participants – the key policy related question underlying this line of analysis.

Second, it is well established that unemployment and non-employment may have lasting consequences in terms of long term wage and employment penalties experienced later on in life (e.g. Gregg, 2001, and Gregg and Tominey, 2005, Cockx and Picchio, 2011).

Third, recent research has also provided evidence that unemployment has consequences in terms of its negative effect on the social capital and trust of young people (Eurofound 2012). These latter effects are likely to contribute to the phenomenon of social exclusion producing both an immediate negative consequence on young people's welfare as well as contributing to the longer-term negative consequences due to the aforementioned wage and employment penalties.

Finally, the research evidence on social capital and youth unemployment is based on only a very few studies and, in contrast to the evidence presented here, where such analyses exist, they

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[1] Inter alia the ILO's 2013 Global Employment Trends for Youth uses this term (ILO, 2013). Of course neither NEET nor NLFET were in use as descriptive terms until well into the new millennium when the OECD began to apply the term NEET. Previously, 'joblessness', 'non-employment', 'broad unemployment', 'discouraged workers' were all terms which found gainful usage – often with different meanings being applied by different authors – to describe the NEET or the NLFET in part or in their entirety.

have thus far been based purely on survey measures of social capital. Several papers have shown that such measures are not strongly related to the more relevant behavioural measures derivable from laboratory experiments (e.g. Glaeser et al., 2000, Fehr et al. 2003, and Farina et al., 2009). The only exception to these negative results is the contribution of Sapienza et al. (2013), which, due to the specific features of their design, have identified a significant correlation of survey measures of trust to both trusting and trustworthy behaviour. Moreover, Fehr et al. (2003) also examined the impact of individual characteristics on behavioural trust and found negative effects of unemployment on trust and above-all reciprocity in a nationally representative sample of participants in a Trust Game[2].

1.2   Aims of this paper

This paper seeks to identify the systematic effect of individuals' labour market status on their behavioural trust and trustworthiness. Furthermore, the main treatment of the experimental design seeks to test the extent to which – and in which direction - subjects' trusting and trustworthy behaviour is affected by the information on the labour market status of their counterpart.

In principle, the behaviour in trust games is the consequence of differing motives, typically expressed in terms of other-regarding motivations such as altruism, notions of fairness as well as more directly strategic motives. Information on one's counterpart may affect any of these components. In this context, information on one's partner in the game may influence one's behaviour by altering any of these motivations. The purpose here is to establish whether there is something to explain, rather than provide a definitive answer concerning what is underlying such altered behaviour. Within the context of the specific games analysed we seek to throw light on which types of motivation are being affected but we do not claim to provide a definitive answer.

We implement two one-shot trust games with random and anonymous matching: in the first game, subjects receive no information on the counterpart; in the second one, the labour market state of both players is common knowledge. We implement a dictator game and individual decision problems (i.e. lottery choice) to control for other motivational factors such as unconditional preferences (i.e. altruism and inequity aversion) and attitude towards risk that might affect trusting and trustworthy behaviour. Moreover, we combine survey and behavioural data to pursue two main objectives: first, we explore whether behavioural trust and trustworthiness are systematically affected by subjects' socio-economic characteristics; second, we want to test whether subjects' answers to attitudinal questions on trust, cooperation and reciprocity are predictive of their trusting and trustworthy behaviour.

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[2] Specifically, the coefficient on unemployment was negative for both senders and receivers in Fehr et al. (op. cit.), however, it was only statistically significant for receivers; i.e. it was a statistically significant determinant of behavioural reciprocity but not trust.

1.3   Organisation of the paper

The paper is organized as follows. Section 2 describes the experimental design which comprises five phases: 1) Questionnaire eliciting subjects' socio-economic characteristics; 1) Dictator Game; 3) Two one-shot and anonymous Trust Games; 4) Lottery choice; 5) A second questionnaire eliciting subjects' attitudes. Section 3 provides a descriptive analysis of behaviour. Section 4 reports the results of the econometric analysis of behavioural trust and trustworthiness in the two trust games. Section 5 concludes.

2. Experimental approach: The Trust game

The approach adopted here comprises a combination of more traditional survey based measures of attitudes, behaviour and status with a laboratory based experiments on young people. The aim of the experimental design is to study the behavioural differences amongst individuals in different labour market states as well as to study if and how subjects' trusting and trustworthy behaviours are affected by information on the labour market status of their co-players.

The entire process took place in the laboratory. Young people aged 19-29 were recruited from outside the University environment more commonly used. Subjects were invited to participate in experimental sessions which, articulate in the following six computer-based tasks, managed by a server running a z-tree script (Fischbacher 2007):

1) Survey I

At the very beginning of the experiment, subjects were required to answer to a questionnaire aimed at eliciting their socio-economic characteristics.

2) Dictator Game (DG)

Players were randomly (and anonymously) matched and invited to play a DG, described in more detail below, with no information on their counterparts;

3) Trust Game (TG1) with 'no information' (TG1)

Players were then randomly re-paired and asked to play a TG with no information on their counterparts;

4) Trust Game with 'status information' (TG2)

Players were randomly re-matched and played a second trust game. This time, however, they were given information on the labour market status (in Education, in Employment or NEET) of their co-respondent, but no other information;

5) Lottery choice

To elicit their risk preferences, players were then asked to choose one out of six lotteries put in an order of increasing risk;

6) Survey II

Players filled out a questionnaire eliciting more qualitative, and potentially sensitive, information on their attitudes towards trust and reciprocity, their locus of behavioural control and their family background.

Each of these elements is described in more detail below. It is important to observe at the outset, however, that elements (2) – (5) inclusive all involved choices which had direct financial consequences. Apart from individuals playing the role of dictators in the DG, in the remaining behavioural tasks actual outcomes depended on the behaviour of others (TG1 and TG2) or upon chance (lottery choice). Furthermore, players received the instructions on the experimental task they were about to face phase-by-phase. Therefore, subjects did not know the entire structure of the experiment at the outset. All players knew that they would have received a turn-up fee. All payments were made only at the very end of the experimental session and, apart from the turn-up fee and for dictators in the DG, players came to know of the behaviour of their counterparts and hence the size of their payments only at the very end of the experiment.

At the beginning of the experimental sessions players were attributed a role of either A (sender) or B (receiver) which they maintained throughout the experimental sessions. However, in each separate phase of the experiment, players were randomly (and anonymously) (re-)matched with a co-respondent such that in each of the three paired games, they played with a different partner without however ever being aware who that partner was.

The experiments were run in three countries, Hungary, Italy and the UK. The three countries were chosen to cover differing economic, institutional and cultural contexts and to allow a consideration of how these affect behavioural choices[3]. Indeed, the specific sites of the experiment within the countries were also chosen with a view to accentuate any such cross country differences. Hungary is a Central European country with a history of centralized planning and subsequent transition to the

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[3] The importance of culture in determining institutions and vice versa has been discussed at length recently by Alesina and Giuliano (2015). A key focus in this debate has been on the role of trust in cultural and institutional development.

market. It has a relatively low unemployment rate (7.1% in December 2014)[4] and a (medium level) ratio of youth to adult unemployment of 2.8 (last quarter, 2014). Budapest, the site of the experiment, has a rate of aggregate unemployment which is significantly lower than the national average (5.2% in the last quarter of 2014). On the other hand, the UK is also characterized by a relatively low rate of unemployment (5.8% in the last quarter of 2014) but has a relatively high ratio of youth to adult unemployment (3.9 in the last quarter of 2014). As regards the institutional context, the UK labour market is relatively flexible with low levels of employment protection. Once again, Oxford, where the experimental sessions were run, is a relatively prosperous and well-educated part of the country with an unemployment rate significantly below the national average (3.6% in late 2014). In stark contrast, Italy has a relatively high unemployment rate – 12.4% at the end of 2014 - **and** a relatively high youth-adult ratio of unemployment rates (3.2 in the last quarter of 2014). Moreover, Naples, where the experiments took place, is characterized by unemployment rates which are well above the national average (24.6%) with a correspondingly high rate of youth unemployment (57% in 2014). The Italian labour market is characterised by the so-called Mediterranean model with highly protected core (primarily prime age male) employees and a secondary labour market for the young and – to some extent - females in primarily precarious employment with limited access to the core.

Thus, the countries, and the sites within countries where the experimental sessions were run, were chosen to allow for significant variation in both institutional and economic context. Although not the main focus of this paper, this allows for more detailed analysis of cross-country differences and in particular, the variations in 'meaning' and effects of different labour market states across countries. For example, it is reasonable to suggest that being neither in employment nor education *is*, but also *sends,* a different signal in an area characterised by very high as opposed to very low levels of unemployment. Hence, both behaviour of, and the behaviour towards, people in different labour market states may well vary across countries for this reason.

2.1 The Experiments

2.1.1 The Dictator game (DG)

The Dictator Game (DG) is a simple and oft used game in experimental economics. It provides a measure of unconditional other-regarding behaviour[5] in a context where any strategic motives for behaviour are excluded by design. Thus, in principle, the dictator game serves here as a benchmark

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[4] Data at the national level and by age are drawn from Eurostat; local unemployment statistics from national statistical services. In both cases these are labour force survey based estimates.

[5] This is too be distinguished from the conditional other-regarding behaviour (reciprocity) elicited from receivers in the trust game.

of unconditional other-regarding preferences for the subsequent trust game, where givers' strategic motives of action come into play. The game involves two players, A and B. In addition to the turn-up fee, A players were given 10 tokens[6] which they could keep or, if they so wished, give some or all to the corresponding B player – who they were aware did not receive any tokens (save those passed by player A). Any sums thus shared provide a measure of other-regarding behaviour since there is no economic incentive to share any of the money given them by the experimenter. Whilst A players were making decisions about how many tokens to send, B players were asked to report how many tokens they expected their corresponding A player to send[7].

2.1.2 Trust Game (version 1, no information; TG1)

The Trust Game[8] may be seen as a development of the DG outlined above. Player A receives 10 tokens and may pass some or all of these tokens to player B. Here the similarity with the DG ends; player B receives the tokens sent by A multiplied by 3[9]. B may then either keep any tokens sent by A or may send back to A all or some of the tokens received. In the implementation of this game, we adopted the strategy method in eliciting B's response to A's play; in practical terms, this means that A and B made their decisions simultaneously, with B having to decide his/her response for each of the possible amount of tokens (3, 6,…., 30) received from A[10]. This method permits the collection of information on B's decisions about how much to send back for each of the 10 possible non-zero transfers of player A. Obviously, the amount actually returned to the sender depended on the actual amount sent by A in the first place. In any event, the outcome of the game was revealed to both players at the end of the complete experimental session.

The sense underlying the Trust Game is that 'A' players are faced with what amounts to a risky investment. Indeed, because any amount sent is multiplied by 3, there are potential gains from trade for an A player if the matched B player send back an amount higher than the one originally sent

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[6] The cash value of the tokens varied slightly across countries with the intention of maintaining a roughly constant real value. Specifically, in Hungary the exchange rate was 1 token = Hft.100; in Italy, 1 token = €0.50; and, in the UK, 1 token = £0.50.

[7] Inter alia, this made it harder for any player to identify A and B players in the experimental laboratory since both were involved in a similar task simultaneously.

[8] The first use of the trust game is generally attributed to Berg et al. (1995), for reasons which should become clear below, although always intended to elicit trust (and reciprocity) on the part of participants, the game was originally called the Investment Game.

[9] Various elements of the TG may be varied in different circumstances; for example, the multiple of A's 'investment' which is received by B. We limit ourselves here to describing the game as implemented here.

[10] Obviously if A decided to keep all ten tokens, B has no decision to make since (s)he received no tokens.

by A (Berg et al. 1995). In principle, to maximize social welfare (the total surplus), player 'A' must send all of his/her tokens to B, hence the initial 10 tokens become 30; if they were able to agree beforehand, one might imagine the two players opting to split equally the surplus so that A sends 10 tokens to B so that B receives 30 tokens from A and sends back 15 to A. Under the usual assumptions of traditional neoclassical microeconomics, however, it is absolutely clear that a rational 'A' player will never send any tokens to B because A 'knows' that (a rational) B will never send anything A sends him/her back since there is no mechanism to ensure 'B's cooperation and since it is a one-shot game, there are no reputation effects to consider. Any implicit agreement entailing cooperation between players is not enforceable so players will have – in the traditional neoclassical view – no incentive to invest in the strategic interaction.

Typically, however, this does not happen. A sends some tokens to B and B sends some tokens back. There is a substantial literature seeking to explain the motivations underlying the cooperative – and apparently irrational – behaviour of A and B. What interests us here in particular, however, is how behaviour changes according to circumstances and in particular according to labour market status.

The behaviour of senders – A players – in the trust game is, or can be understood as being, determined by a combination of other-regarding and strategic motives. Econometric analysis of the behaviour of senders in the trust game thus takes into account players' behaviour in the dictator game. The second, strategic motive related to the choice as a risky investment may be influenced by a variety of factors; attitudes towards risk (risk aversion), the desire to avoid disappointment in placing trust in the correspondent (betrayal aversion). In determining one's choice, of course, players formulate beliefs about the behaviour of their correspondents. In what follows we use the results to throw light on these various issues, although, as noted above, our main aim here is establish that whether or not there is something to explain rather than to fully explore all the possible underlying factors determining choices.

2.1.3 Trust Game (version 2, status information; TG2)

The same basic format of the trust game was then repeated – with random re-matching (without replacement) of participants. In the second trust game, however, players were informed on the (broad) labour market status of their counterpart before making their decisions; specifically whether their counterpart was employed, in education or NEET.

The principal purpose here is to see if, and how, behaviour in the trust game is affected by, albeit very limited, information on the corresponding player. Specifically, if and how, behaviour is affected by information on the labour market condition of the other player. Why should this occur?

Either because the knowledge affects senders' other-regarding motives towards the anonymous recipient with whom they are paired, or because the knowledge is interpreted as a signal of recipients' expected trustworthiness.

On the other hand, the effects of information on B players' choices are closer to A players other-regarding motives in as much as they lack any strategic component linked to a potential financial gain. Both issues will be returned to below.

2.1.4 Lottery

The final behavioural task involved the choice of a lottery by each individual; the purpose being to elicit risk attitudes amongst the participants (Eckel and Wilson 2004, Houser et al. 2008). The elicitation of individuals' risk attitude is relevant for the analysis of trust because the senders' choice problem in the trust game resembles a risky investment. Therefore, the lottery choice task allows us, in what follows, to test the hypothesis that the more risk averse a subject is, the lower his/her level of behavioural trust is. Moreover, controlling for risk aversion in the econometric analysis allows us to test whether (or not) differences in behavioural trust observable across different individuals in differing labour market states are due to differences in attitudes to risk across those individuals.

Table 1: Lottery Choice

	Heads	Tails
Lottery 1	7	7
Lottery 2	9	6
Lottery 3	11	5
Lottery 4	13	4
Lottery 5	15	3
Lottery 6	17,6	0,4

Players were shown a table (table 1) which listed 6 different – and increasingly risky – lotteries[11]. Participants had to choose one out of the six lotteries and, subsequently, a coin was physically tossed to decide which outcome was to be applied. To illustrate the point, suppose a player chose lottery 1, corresponding to the riskless choice[12] this would imply that they would receive 7 tokens independently of the toss of the coin (specifically, heads = 7 or tails = 7); on the other hand, if they chose lottery 4, they would receive 13 tokens if heads was tossed, or 4 tokens if tails. A rapid perusal of the table is sufficient to verify that the expected value of the outcome increases as does the distance between the better and worse outcomes as one moves from lottery 1 through to 5[13]. It is possible to calculate the range of values of (Constant Relative) Risk aversion to which each choice corresponds; the main point here is that the lottery choice provides a measure of the risk preferences of individuals which is employed in the empirical analysis of the results below.

2.2 Questionnaire (parts 1 and 2)

At the beginning and at the end of the experiments, subjects were asked to respond to a questionnaire. The first part, undertaken at the start of the experiment was concerned with more 'neutral' fact based questions concerning educational attainment, current status, working experience and so on. Following the decisions taken during the experimental sessions, questions seeking to elicit attitudes, opinions and/or expectations along with questions of a possibly more sensitive nature (e.g. on family income and wealth) were introduced. The splitting in two parts of the questionnaire was determined by: a) the necessity to find out individuals' labour market status for use in TG2; and, at the same time b) the desire to avoid conditioning or framing responses by discussing issues related to trust, reciprocity and other attitudinal questions before the decisions were taken during the experiment. At the same time, having information on attitudes allows us to examine in more details the nature of the choices taken.

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[11] The lottery is a slight modification of those used by Eckell & Grossman (2008) and Casari et al. (2013).

[12] And a very high degree of Constant Relative Risk Aversion (CRRA) of more than 3.64.

[13] Note however, that lottery 6 is riskier than, but has the same expected value as, lottery 5 hence allowing for the possibility of negative risk aversion (i.e. risk loving behaviour).

3.   Descriptive analysis of behaviour

In this section we present some first results emerging from the experiments based on descriptive analysis of choices made. For the time being these are based on the results from Hungary and Italy.

3.1   The Dictator Game

Rather unsurprisingly, the height of the blue bars show that on average, A players kept rather more than they shared with B players in the DG (figure 1). Looking at behaviour across countries, the UK dictators kept the largest portion (almost 8 tokens on average) whilst the Italian ones kept slightly more for themselves than their Hungarian counterparts. What is perhaps a little more surprising is that a priori expectations amongst B players conformed fairly closely to reality on average (see the sent and expected columns); indeed, the country ranking of the average expectations of B players concerning the generosity of A's is the same as the country ranking of A's demonstrated generosity.

Figure 1: Dictator Game, tokens kept sent and expected
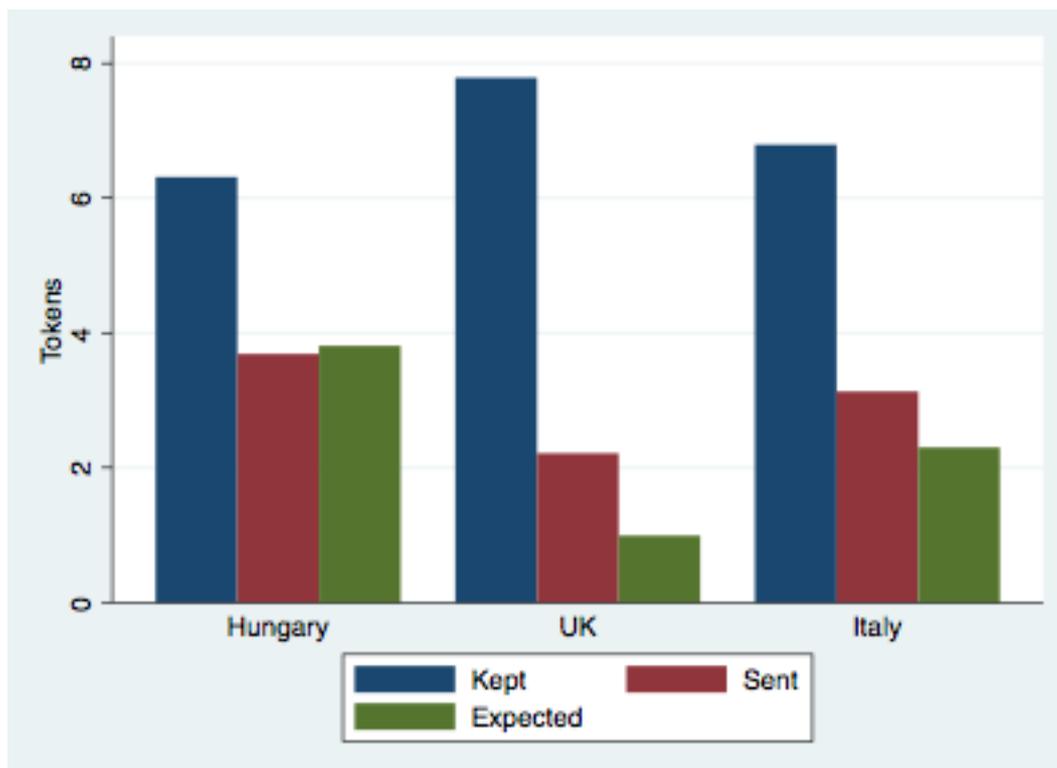
Source: Author calculations

Looking at behaviour in the Dictator Game by labour market status, one finds rather small differences between the employed, students and NEET. NEET and students are more generous than the employed in Hungary and less so in Italy and the UK. In all three countries, students are at least as generous as NEETs. Perhaps the most striking impression from the figure is that differences across labour market states are much less marked than are differences across countries. Indeed, in the econometric results reported below, interaction terms between countries and labour market status were never statistically significant and were consequently dropped from the analysis. A second observation emerging is that the expectations of B players tend to mirror actual behaviour of Dictators rather closely, apart from in the UK as observed above.

Figure 2: Tokens sent and expected by status
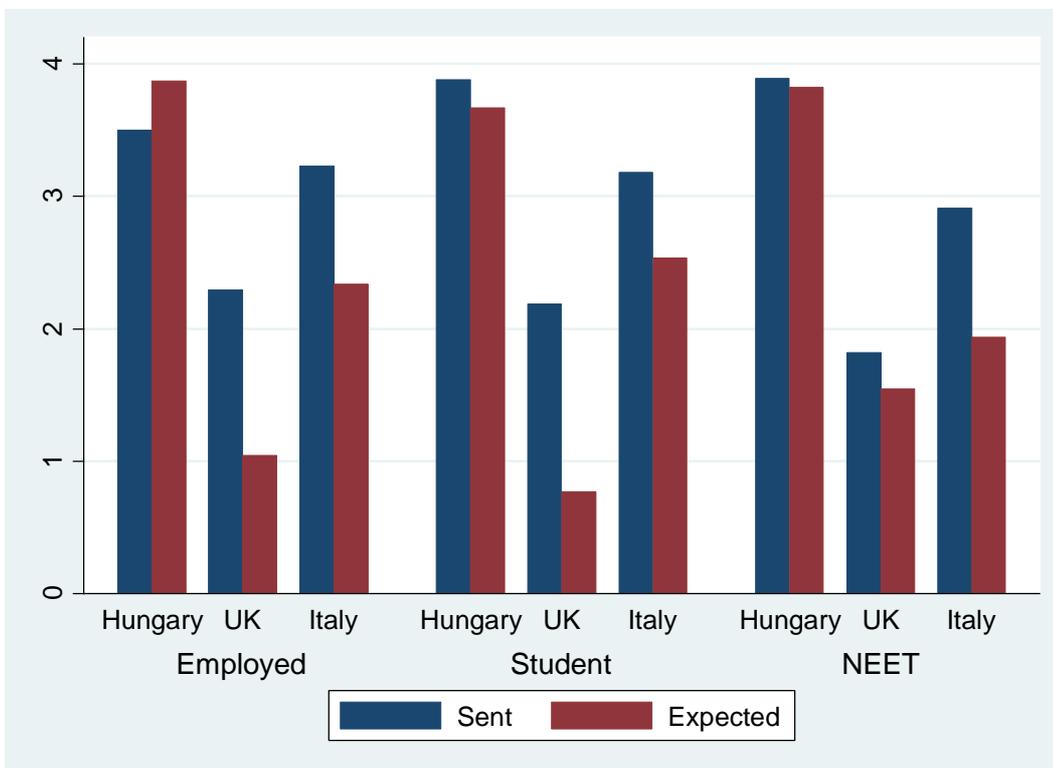
Source: Author calculations

## 3.2 **Trust game**

Turning to the Trust game (figure 3), one may observe a broadly similar pattern in senders (Player A) behaviour across labour market states to that observed in the DG (figure 2). Across countries several differences emerge. Comparison of behaviour across DG and TG suggest that other-regarding motives are relatively weak and consequently strategic motives are relatively strong

in the UK. IN contrast, in Italy one observes an apparently contradictory result; the average number of tokens actually fell between the DG and TG1 in Italy, whereas, as has been more commonly observed in other experiments, in Hungary the amounts sent increased slightly (and in the UK more substantially).

The apparent contradiction in Italians' behaviour arises inasmuch as, following Cox (2004), it has often been assumed that the DG provides an indicator of other-regarding preferences whilst the TG provides an indication of other-regarding preferences PLUS the (non-negative by assumption) 'trust' motive. This is the intuition underlying Cox's (2004) triadic experimental design. If this is the case then players should never give less in the TG than in the DG. Clearly this condition is violated here. The Italian results presented here, however, are in line with the findings of Ashraf et al. (2006) who question the assumption of the additionality of trust. Inter alia, the simplistic reasoning underlying the presumption of additionality does not allow for the effects of betrayal aversion (i.e. the disutility of experiencing or anticipating the non-reciprocal behaviour or 'cheating' by the counterpart) in the decision making process. More precisely, given that receivers in the DG play a passive role, dictators do not run the risk of being "cheated on" by recipients. By contrast, in the TG the receiver has the possibility to free ride on the sender's trusting choice. Because of that, senders may anticipate the costs of receivers' non-reciprocal' behaviour by sending less compared to the amount sent in the DG.

Figure 3: Amounts sent in the Trust Game by A players, by country and status
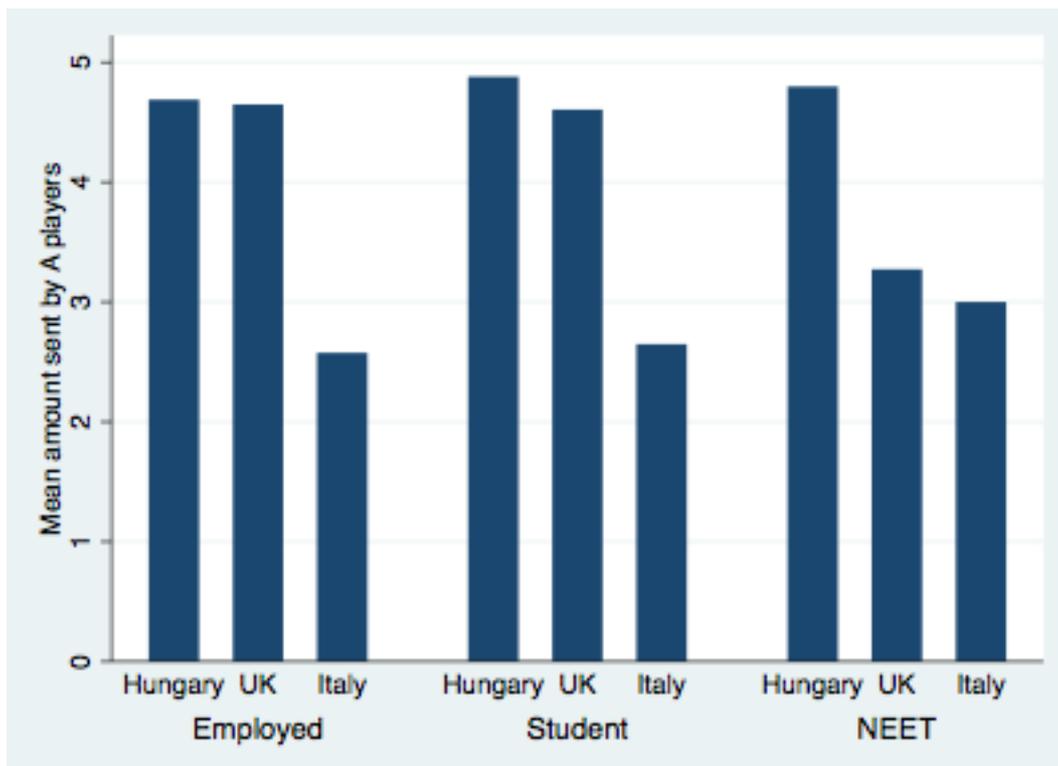
Source: Author calculations

The subjective degree of betrayal aversion depends on the level of social capital in a given context. Indeed, much of the early evidence on social capital and the effects of its lack, comes indeed from Southern Italy *(*Puttnam et al. 1993). If, as is plausible, betrayal aversion is particularly strong in Southern Italy, then it is quite possible for the trust motive to lead to a 'negative' investment choice on the basis of the trust element; in other words, this raises the possibility of reference-dependent betrayal aversion considered by Bohnet et al. (2009). On the other hand, players from the UK who were the least generous in the Dictator game, increase substantially their contributions in the Trust game. We shall return to this issue below.

It also raises the issue of the 'sensibleness' of trust in this context. If we abandon for a moment the notion of rationality as envisaged by neoclassical economists and base it rather on observed behaviour one can examine the question of whether it makes sense for A players to 'trust' B players sense of obligation. The strategy method used to elicit B players' choices is particularly well adapted to consider the question of whether A players were right (or would have been right) to invest.

In Hungary, it is clear that investment in the game by A players tended to pay off (figure 4a). Looking at A players as a whole, independently of what type of person they interacted with, the average rate of return[14] is always greater than one; this indicates that A benefitted (or would have benefitted) from the 'investment'[15]. One may also observe that it is increasing in the amount of tokens sent, so that on average, A's overall profits increased with the amount sent. On the other hand, in both Italy and the UK, the investment of trusts doesn't, on average, payoff and, although in common with Hungary rates of return in both Italy and the UK tend to increase with the amount sent by senders, rates of return for all three countries taken together remain less than one (figure 4b).

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[14] The rate of return is defined here as the no. of tokens sent back by B divided by the number of tokens sent by A. Clearly, 1 is the break-even point. Any rate of return above that represents a positive return on A's 'investment'.

[15] Note that the figure is constructed using the strategy method replies of B which provides information on the amounts which were to be sent back conditional on the amount sent by A – for all possible values.

Figure 4: Rates of return to A's (hypothetical) investment according B player's status by country

4a: Hungary
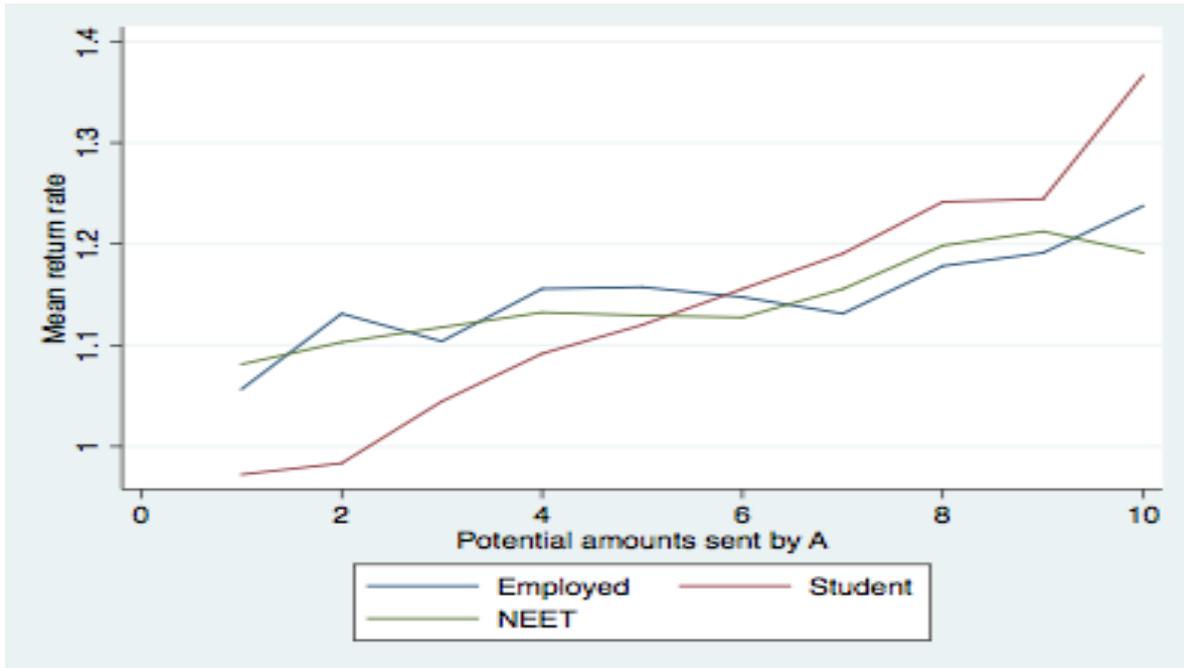
4b: Pooled data (Hungary, Italy & UK)
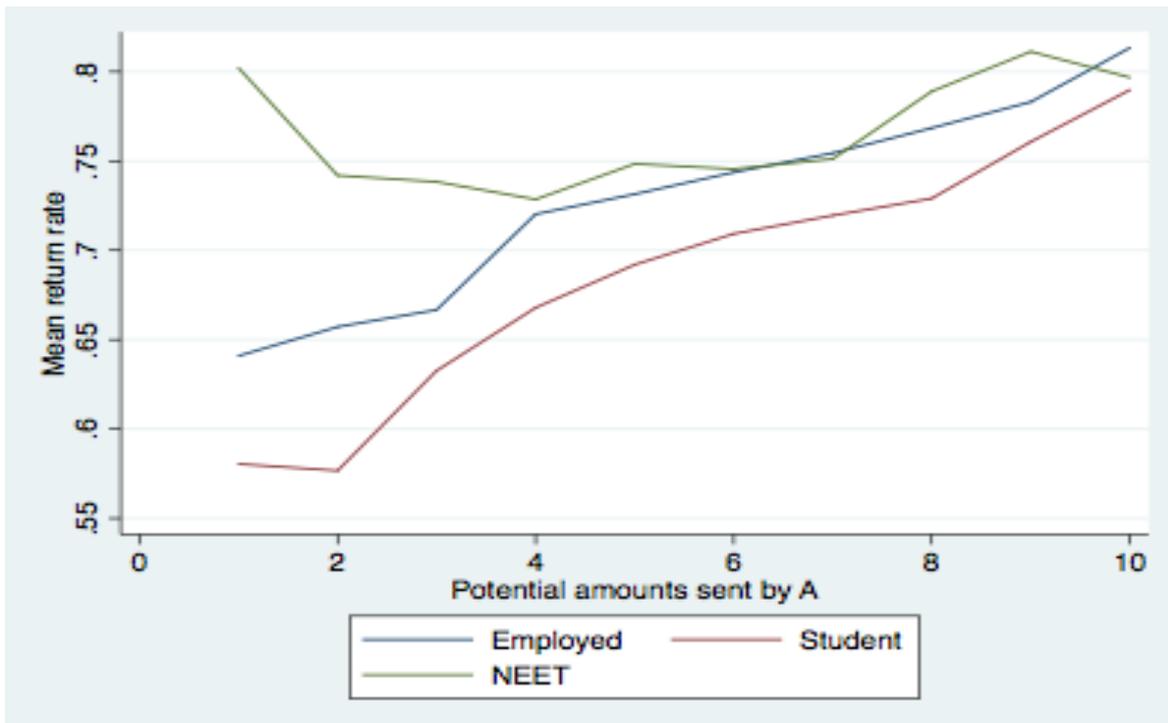
Source: author calculations

Note: the rate of return is defined as the amount sent back by B divided by the (hypothetical) amount sent by an A player, elicited through the strategy method.

3.3   Trust game with information on recipients

In the second Trust Game (TG2), players were provided with information on their interlocutors. Thus A players knew whether the person with whom they were interacting was employed, a student or NEET. We can see that, in both Hungary and Italy, the average amounts sent by A players increased albeit moderately according to whether the recipient was employed, student or NEET respectively (table 2). In the UK, senders tended to be more generous with students but not with NEETs. Overall, the pattern of sending seems to be more in line with a solidaristic approach with those without income (Students and NEETs) usually receiving more than the employed.

Table 2: Amounts sent by A players according to the (known) status of B players

	Hungary	UK	Italy
All	4.52	4.54	2.27
Employed	4.39	4.21	2.26
Student	4.4	5.14	2.86
NEET	4.88	4.25	3.32

Source: Author calculations

3.4   Risk preferences: Lotteries

As it turns out, in our samples, the NEET are the least risk averse of the three (status defined) groups in both (figure 5). This is likely be an important factor in determining trust, and shall be returned to below.

Figure 5: Mean Lottery choice by status and country
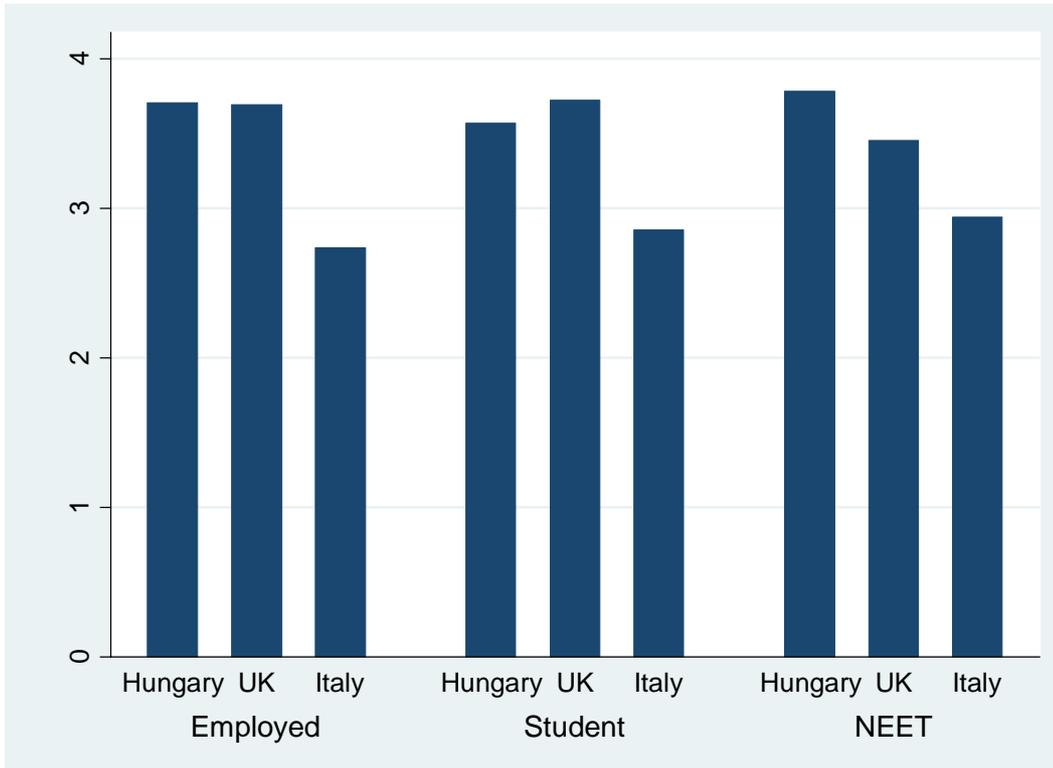
Source: Author calculations

3.5 **Attitudes**

Before embarking on the econometric exploration of the data, it is worth briefly looking at attitudinal issues which emerged from the experiments. Once the behavioural tasks had been completed, but before the outcomes were known, participants in the experiment were asked a series of questions (see appendix for complete questionnaire) related to their attitudes to trust, cooperation, reciprocity and locus of control. These were used to construct four indices concerning these four dimensions which were used as controls in the econometric analysis. It is instructive however to examine briefly the relation between status and these attitudes here (table 3).

Table 3: Indices of trust, reciprocity, cooperation and locus of control by status and country

	Italy			
	All	**Employed**	**Student**	**NEET**
Trust	12.8	13.3	12.7	11.9
Reciprocity	12.2	12.0	12.5	12.2
Cooperation	12.6	12.8	12.1	12.9
Locus of Control	13.5	13.4	13.6	13.4
	UK			
	All	**Employed**	**Student**	**NEET**
Trust	17.4	17.4	17.5	16.2
Reciprocity	12.9	12.9	13.3	11.9
Cooperation	13.1	13.4	12.2	14.5
Locus of Control	13.5	13.4	13.7	13.2
	Hungary			
	All	**Employed**	**Student**	**NEET**
Trust	14.5	14.5	15.6	13.7
Reciprocity	12.5	12.4	12.5	12.7
Cooperation	12.1	12.3	12.0	11.9
Locus of Control	14.8	14.9	14.8	14.5

Source: Author calculations

One may observe that, consistent with the basic findings in the TG experiments reported above, young Italians are less trusting than their Hungarian counterparts who in turn are less trusting than young British people. It will also be observed that, students are more trusting than the employed in the UK and Hungary, and less so in Italy, in all countries, the NEET are the least trusting of all. This suggests that, as regards the NEETs, something other than trust – e.g. the investment motive, the relatively cavalier attitude of NEETs to risk and/or the possibility of projection - which may explain the relative generosity of NEETs in the TG. In any event, we will return to the role of attitudes below in the econometric analysis.

4. The Determinants of Trust and Trustworthiness: Econometric analysis

In this section, we report the results of the econometric analysis of subjects' behaviour in TG1 and TG2 together with the analysis of the behavioural variation across the two trust games.

4.1 Determinants of Trust in TG1

In order to take the analysis one stage further, econometric analysis was employed to look at the role of individual characteristics, status and attitudes in the Trust game. The results presented here are on the basis of ordered probit models – the obvious choice given that the dependent variable is an integer– pooled over the three countries (table 4). First, the no. of tokens sent by A players was estimated as a function of some basic individual characteristics, variables representing labour market status and, in the second specification also variables representing attitudes and preferences. A term controlling for the number of tokens sent in the dictator game (called "other-regarding behaviour") is also included as an explanatory variable to control for possible altruistic motives as noted above.

Beyond the basic distinction between employed, student or NEET, the labour market status variables further identified types of employment (in particular, entering additional dummy variables for temporary and informal employment[16]) and within the NEET a dummy variable was added for the unemployed. The sub-categories of NEET and employed were added additionally to the base (NEET or Employed) category so the effect of say being unemployed (as opposed to being a student – the excluded labour market status variable) was the sum of the coefficients on NEET and unemployed.

Two specifications are reported: the first one includes only individuals' characteristics, while the second one introduces individuals' attitudes and preferences as further control variables. Looking first at the specification without attitudinal variables, as would be expected, the tokens sent in the Dictator Game are positively associated with those sent in the Trust Game. Perhaps of more interest, the young men appear to be more trusting than young women[17] as do older young people (aged over

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[16] Permanent employees were the default – excluded - category from the regression; informal employees were defined as those with no employment contract.

[17] It might be further observed that this result is driven by the behaviour of Italian young men and women and this result is in line with the results reported in O'Higgins et al. (2015) which found, in contrast to analyses in

25) as opposed to younger ones. As we observed in the above, Italians are the least trusting and the English the most. Note that the latter effect is a consequence of the fact that, although the amounts sent in the trust game by both Hungarians and English young people is broadly similar –indeed, the English young people send somewhat less on average than Hungarians – it is the English young people whose behaviour changes most between DG and TG.

Table 4: Ordered probit estimation of the determinants of trust in TG1, Pooled data

	Pooled Data			
	coeff	SE	coeff	SE
Individual char.s				
Other-regarding preferences	0.32***	0.01	0.31***	0.01
Male	0.11***	0.03	0.07*	0.04
Aged 25-29	0.17***	0.04	0.17***	0.04
Tertiary Educ.	0.09*	0.05	0.06	0.05
Hungary	0.62***	.002	0.54***	0.05
UK	0.88***	0.07	0.75***	0.07
LM status				
NEET	0.03	0.07	0.02	0.07
- & Unemployed	0.00	0.07	0.02	0.07
Employed	0.01	0.05	0.03	0.05
- & Temp. contract	- 0.26***	0.08	-0.26***	0.08
- & Informal	-0.12*	0.07	-0.13**	0.07

other countries, that women were particularly ungenerous Dictators in DG's run amongst southern Italian students – a finding which is explained in terms of the matrilineal culture of that region.

Attitudes				
Lottery (risk)			0.08***	0.01
Reciprocity			0.00	0.006
Trust			0.01***	0.003
Cooperation			-0.00	0.006
Locus of Control			0.01*	0.005
Pseudo R-Squared (adjusted)	0.12		0.13	
n	316			

Source: Author calculations

As regards the labour market status variables, it appears that being NEET does not – across all countries – affect senders' behaviour. The key labour market variable determining a lack of trust is temporary employment, and, to a lesser extent informality. Thus, the results suggest that precariousness appears to have a more detrimental effect on trust than does non-employment per se.

Introducing attitudinal variables does not change the other parameter estimates greatly, although once attitudes to risk et al. are controlled for, the parameter on informality becomes statistically significant. This suggests that the negative influence of precarious employment on trusting behaviour is not determined by attitudes to risk per se.

Turning to the attitudinal variables themselves, the results suggest that it is risk preferences which are the primary 'attitudinal' determinants of 'trusting' behaviour. Thus, the investment motive is a relevant driver of senders' choice behaviour. However, this result does not amount to be a reduction of trust to the selfish maximization of expected utility. Indeed, consistent with the findings of Fehr et al. (2003) and Sapienza et al. (2013), the index of attitudinal trust is a also a statistically significant albeit numerically smaller predictor of senders' behaviour. Note too that trust is also positively associated with a more internal locus – that is with a greater sense of one's own ability to influence outcomes.

4.1.1 **Determinants of trustworthiness in TG1**

Turning now to the amounts sent back by B players - or behavioural reciprocity – the estimates are more precise, also because in this case, due to the use of the strategy method, the number of observations is rather larger (table 5)[18]. In this case, and in contrast to player A behaviour, there is no role played by risk preference as indeed one would expect. Otherwise, with some minor exceptions, the results are rather similar to those for trust, at least as far as labour market status is concerned.   Indeed, individuals on temporary contracts and to a lesser extent those in informal employment send back less. This mirrors rather precisely the results for A players reported in table 5 above, which again provides further – albeit implicit - support for the hypothesis that projection onto other players is a relevant determinant of player A's behaviour. Specifically, A players' decisions on how much to send, are likely to depend, to a greater or lesser extent, on how they expect B players to react to that choice; one possible way of informing this decision is introspection – that is, how they themselves would react in this situation[19].   That is, it maybe that senders project their own behaviour patterns onto their correspondents[20], and, If this effect operates and people in precarious (temporary and/or informal) employment are less reciprocal on average than others, then, as a consequence, we would tend to observe also a lower degree of trust amongst those in precarious employment precisely because they expect recipients to react as they would; that is, as a consequence of being less reciprocal than the average they will send less than average because they expect all to behave as they do.

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[18] Although due account is taken of the panel nature of the data in the calculation of the standard errors.

[19] See, for example, Sapienza et al. (2013) who provide explicit evidence that senders base their expectations of B reactions on their own trustworthiness.

[20] It is also arguable in this context that if it produces a positive return, as in Hungary, trusting behavior is in a (more general) sense (than usually understood by neoclassical economists) 'rational'.

Table 5: Ordered probit estimates of the amounts sent back by B players (Trustworthiness) in TG1, Pooled data

	Pooled data			
	coeff	SE	coeff	SE
sent by player A	0.30***	0.01	0.31***	0.01
Individual char.s				
Male	0.10***	0.03	0.09	0.03
Aged 25-29	-0.04	0.04	-0.04	0.04
Tertiary Educ.	-0.15**	0.05	-0.12**	0.05
Hungary	0.12**	0.04	0.07*	0.05
UK	-0.27***	0.06	-0.38***	0.06
LM status				
NEET	0.30**	0.09	0.38***	0.09
** - & Unemployed**	-0.31***	0.10	-0.39***	0.10
Employed	0.13**	0.05	0.10**	0.05
** - & Temp. contract**	-0.38***	0.06	-0.38***	0.07
** - & Informal**	-0.06	0.06	0.03	0.06
Attitudes				
Lottery (risk)			-0.01	0.01
Reciprocity			0.002	0.007
Trust			0.02***	0.006
Cooperation			0.02***	0.006
Locus of Control			0.02***	0.005
Pseudo R-Squared (adjusted)	0.10		0.11	
N	3160		3160	

Source: Author calculations

On the other hand, one result which is direct contrast with player A behaviour concerns the unemployed. Unemployed young people are particularly unreciprocal, in contrast to their behaviour as senders reported above. One may also observe that Italian young people are particularly unreciprocal, which is in line with Italian A players' lack of trust, but so too are young English people – in contrast to their trusting behaviour observed above. One possible explanation of the latter finding is the relative absence of other-regarding motives observable in British young people through their behaviour in the dictator game observed above [21]; certainly this aspect would bear further investigation.

The introduction of attitudes into the equation again does not change the original parameter estimates very much, however, it does so more than it did in the estimates of trust. Finally, it is worth noting that attitudinal trust, cooperativeness and locus of control, but not attitudinal reciprocity, are positively related to behavioural reciprocity, once again consistent with the findings of Fehr et al. (2003).

4.2 The role of information: determinants of trust and trustworthiness in TG2

4.2.1 Changes in trust

In order to look more closely on the role of information concerning player's counterparts, we estimated the determinants of differences in behaviour between TG1 and TG2[22]. We present the results in two different ways; first by looking at variations in behaviour from the point of view of the passive partner in the decision - that is, for example, the recipient in the decision made by senders and then according to who is making the decision - and then according to who is the active partner in the specific decision.

In this case, in the spirit of a time differenced model, we drop all of the invariant characteristics form the estimates and introduce the nine possible matches between employed, students and NEETs as explanatory variables.

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[21] And which is consistent with the somewhat stereotypical albeit broadly held notion of the UK as a more individualistic society than either Italy or Hungary.

[22] Of course, we also verified that the estimates of the behaviour of senders and recipients in TG2 was otherwise similar that of TG1.

Table 6 reports the results of this procedure. Consistent with a notion of solidaristic behaviour or fairness as applying to those without incomes (NEET and students) and also - broadly – in line with the descriptive statistics presented above, all types of sender tend to increase the amounts sent when faced by a NEET recipient, although this estimated change is never statistically significant. Similarly, both NEETs and the employed tend to increase the amounts sent when faced by a student (although students don't); but again, this is only statistically significant when an employed sender is matched with a student recipient. Finally, both NEETs and students tend to reduce the amounts sent when paired with someone with a job.

Table 6: Estimation of the determinants of changes in trust between TG1 and TG2

DiffSent	Pooled	
	coeff	SE
Matching by LM status		
Employed/Employed	0.25	0.24
Student/Student	-0.19	0.28
NEET/NEET	0.26	0.30
Employed/Student	**0.34***	0.25
Employed/NEET	0.27	0.31
Student/Employed	**-0.38***	0.18
Student/NEET	0.22	0.33
NEET/Employed	-0.28	0.23
NEET/Student	0.29	0.25
R-Squared (adjusted)		0.02
n	316	

Source: Author calculations

Note: XXX/YYY in the table indicates that the sender was type XXX and the recipient was type YYY and, in TG2 this information is common knowledge.

In order to facilitate further interpretation of these results table 7 reports the results of linear tests on the differences across coefficients. If one likes, it reports the difference-in-difference in amounts sent according to who receives them.

The tables illustrate inter alia that although when employed senders are matched with employed receivers they tend to increase their level of trust across TG1 and TG2 (Table 6), employed senders tend to be more generous with students and NEET (i.e. individuals without wages) than with receivers of their own category (Table 7)[23].

Table 7: Tests of the Equality of Coefficients: difference-in-difference (DiffSent)

Differences	Coeff.	SE
Employed/Employed – Employed/Student	-0.08	0.35
Employed/Employed – Employed/NEET	-0.01	0.40
Student/Student – Student/Employed	0.19	0.33
Student/Student – Student/NEET	-0.41	0.43
NEET/NEET – NEET/Employed	**0.54***	0.38
NEET/NEET – NEET/Student	-0.02	0.39

Note: As in table 6 above, **XXX/YYY** in the table indicates that the sender was type XXX and the recipient was type YYY and, in TG2 this information is common knowledge.

Students tend to decrease – though not significantly - their level of trust across TG1 and TG2 when they are matched with other students (Table 6); on the other hand, students are more generous with receivers of their own category than they are with employed subjects (table 7). Furthermore, students tend to increase their level of trust across the two games when they are matched with NEET

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[23] Although the differences are not statistically significant.

receivers: this is testified by both the negative result of the test of the equality of coefficients in Table 7 and by the positive effect of the matching Student/NEET in Table 6.

As regards the NEET, there is a not statistically significant positive effect of being matched with other NEET (table 6); however, NEET senders are more generous with other NEET receivers than they are with the employed (Table 7); that is, the NEET tend to decrease their level of trust when they are matched with employed receivers. Finally, NEET are more generous with students than with other NEET (Table 7) so that NEET senders tend to increase their trusting behaviour in TG2 more when they are matched with students then when they are matched with other NEETs.

4.2.2 Information and trustworthiness

Now we turn to look at the effects of information on the behaviour of recipients. Also in this case, reporting the base coefficients (table 8) as well as explicit tests of equality across specific categories (table 9) can be informative.

Table 8: Estimation of the difference in amounts sent back by recipients

DiffSentback	Pooled	
	coeff	SE
Matching by LM status		
Employed/Employed	**-0.42***	0.13
Student/Student	**-0.66****	0.278
NEET/NEET	**0.43***	0.26
Employed/Student	-0.20	0.18
Employed/NEET	**-0.74***	0.22
Student/Employed	**-0.20***	0.12
Student/NEET	**0.56***	0.14
NEET/Employed	-0.12	0.22
NEET/Student	**0.91***	0.20
R-Squared (adjusted)	0.01	
n	3160	

Once again one can observe that being faced by an employed sender tends to make all types of recipient less reciprocal (table 8); for all types of recipient, in this case, the amount sent back falls when the sender is known to be employed. Also knowing that the sender is a student tends to reduce the amount sent back for the employed and other students but increases reciprocity amongst the NEET. On the other hand, knowing that a sender is NEET, tends to increase the reciprocity of students and other NEETs and leaves employed B players (virtually) unchanged in their behaviour.

Turing to the explicit difference-in-difference (table 9), although the differences in this case are not statistically significant, one can observe that the employed tend to send back less to other employed than they do to students and NEET.

Table 9: Test of the Equality of Coefficients: difference-in-difference (DiffSentback)

Differences	Coeff.	SE
Employed/Employed – Student/Employed	-0.22	0.18
Employed/Employed – NEET/Employed	-0.30	0.26
Student/Student – Employed/Student	**-0.46***	0.33
Student/Student – NEET/Student	**-1.58***	0.34
NEET/NEET – Employed/NEET	**1.17***	0.34
NEET/NEET – Student/NEET	-0.12	0.30

Students send back less to students than they do to the employed, which does not seem to conform to the broad pattern of fairness or solidarity observed above, however, they are much more reciprocal towards NEETs than they are to other students. NEETs on the other hand are much more reciprocal towards other NEETs than they are towards the employed; they are (almost) equally reciprocal with students as they are with other NEETS.

It would appear that for B players or recipients, some notion of fairness or solidarity is leading them – on average - to be more reciprocal with players who are not in employment and hence not receiving a wage or salary. For senders, although a similar pattern is - more or less – discernible, it is much less pronounced and it is plausible to suggest that the mixture of other-regarding and investment motives are playing a role, also in terms of determining the decision on the amounts to send.

5. Concluding remarks

The findings presented here are the result of a rather innovative approach to analysing the question of differences in youth labour markets. Given the relative novelty of the approach and the number of possible aspects to study, we largely confine attention here to establishing the existence of behavioural differences across countries and labour market states and leave for further analysis a detailed analysis of the sources of this variation.

At the same time, the analysis has produced various interesting results as well as suggesting a number of possible avenues for further investigation. We find in the first place statistically significant differences in behaviour – of both senders and recipients in the trust game – across countries and across labour market states. With regard to the latter, these are not strictly in line with our a priori expectations. Contrary to our expectations, for example, NEETs in Italy are more - not less - generous senders in the Trust Game than other young people. The econometric analysis however, allowed us to qualify this basic observation, and showed the importance – as has been noted by various commentators in different contexts [24] of distinguishing amongst NEETS. Clearly, the behavioural analysis presented here supports the importance of this distinction. Unemployed young people are much less generous than other young people in general and other NEETs in particular. A second major finding is the importance of precariousness in employment in its deleterious effects on behavioural trust. Concerns have regularly been voiced in recent years about the negative effects of the increasing prevalence of temporary employment forms on young people's early labour market experiences[25] and the results presented here appear to strongly support these concerns. Temporary employment appears to be at least as damaging to behavioural trust as unemployment, adding further support to those who would question the ever increasing flexibilization of youth labour markets.

On the other hand, the findings are in line with – and throw light on - some of the other findings in the behavioural economics literature. In terms of the impact of unemployment on behaviour, there are quite striking similarities in the results presented here and those of Fehr et al. (2003) which analysed working age adults in Germany. The results are strongly suggestive, albeit not definitive, on the existence of betrayal aversion which appears to be particularly strong in Italy and relatively weak in the UK. Behavioural changes arising from information on the labour market states of other participants seems to suggest a strong role for solidaristic other-regarding – motives as

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[24] For example, Furlong (2006) and Elder (2014).

[25] See, *inter alia*, O'Higgins (2010, 2012).

regards trust and reciprocity towards Students and NEET; this might profitably be explored by further exploiting cross-country differences in behaviour and attitudes.

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STYLE Working Paper D7.1 Business Start-Ups Youth Self-Employment Policy Literature Review

Country Reports

Business Start-Ups and Youth Self-Employment in Germany
Ortlieb and Weiss (2015)
STYLE Working Paper WP7.1 Germany

Business Start-Ups and Youth Self-Employment in Estonia
Masso and Paes (2015)
STYLE Working Paper WP7.1 Estonia

Business Start-Ups and Youth Self-Employment in Spain
González Menéndez and Cueto (2015)
STYLE Working Paper WP7.1 Spain

Business Start-Ups and Youth Self-Employment in Ireland
Sheehan and McNamara (2015)
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Business Start-Ups and Youth Self-Employment in Poland
Pocztowski, Buchelt and Pauli (2015)
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Business Start-Ups and Youth Self-Employment in the UK
Hinks, Fohrbeck and Meager (2015)
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Masso et al. (2015)
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STYLE Working Paper WP9.3 Aspirations of vulnerable youth in foster care

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WP 10 FLEXICURITY

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STYLE Working Paper WP10.1 Mapping flexibility and security performance in the face of the crisis

Youth School-To-Work Transitions: from Entry Jobs to Career Employment
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STYLE Working Paper WP10.2 Youth School-To-Work Transitions: from Entry Jobs to Career Employment

Flexicurity and Subjective Insecurity

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8. Research Partners

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2. Institute for Employment Studies	– United Kingdom
3. Institute for the Study of Labor	– Germany
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9. Advisory Groups

Consortium Advisory Network

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www.businesseurope.eu

ETUI: European Trade Union Institute
www.etui.org

European Youth Forum
www.youthforum.org

European Foundation for the Improvement of Living and Working Conditions
www.eurofound.europa.eu

ILO: International Labour Office
www.ilo.org

OECD: Organisation for Economic Cooperation and Development
www.oecd.org

OSE: Observatoire Sociale Européen
www.ose.be

SOLIDAR: European network of NGOs working to advance social justice in Europe
www.solidar.org

EurActiv
www.euractiv.com

European Commission, DG Employment, Social Affairs & Inclusion
http://ec.europa.eu/social/main.jsp?langId=en&catId=1036

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