Journal of Behavioral Economics for Policy, Vol. 5, Special Issue 2:
The Behavioral Economics of the Unseen, 103-120, 2021

Strength of social ties: How non-monetary bonds affect east germans' decision to stay after german reunification

Alison Macintyre[1,2]*, Tony Beatton[2], Ho Fai Chan[1,2], Benno Torgler[1,2,3]

Abstract
Love of family and loyalty to country are warm-blooded motivations that can impact the human migration decision. Our social ties and allegiances reflect where we choose to live, work, pay taxes, and contribute to community. The migration literature typically examines why people move from one place to another; in contrast, we look at why people choose to stay. Using behaviours that reflect time use as proxies for the strength of social ties, we investigate the East-to-West Germany migration decision immediately after the fall of the Berlin Wall. We find that social ties do matter. More frequent involvement in family activities, social gatherings, entertainment, or sports activities is associated with East Germans not staying in the East. On the other hand, those with greater church involvement, those who engage in more cultural activities and have higher levels of education, and those with larger family commitments are more likely to stay in East Germany.

JEL Classification: O15; Z1; D91; C90

Keywords
migration — german unification — loyalty — social ties

[1] *School of Economics and Finance, Queensland University of Technology, Australia*
[2] *Centre for Behavioural Economics, Society and Technology (BEST). Queensland University of Technology, Brisbane, Australia*
[3] *CREMA - Center for Research in Economics, Management and the Arts, Switzerland*
***Corresponding author**: alison.macintyre@qut.edu.au

> Conflicts of loyalty are especially important during times of rapid social change and when the state feels threatened from within and without. During such times, individuals are uncertain of the intentions and the reliability of others, and the old patterns of belief and affiliation conflict with the new patterns that are emerging.
>
> Schaar (1968, p. 468)

> [P]laces are more than simply geographic sites – they are also fluid, changeable, dynamic contexts of social interaction and memory, and they "contain" overt and covert social practices that embed in place-making behaviors notions of ideology, power, control, conflict, dominance, and distribution of social and physical resources.
>
> Stokowski (2002, p. 368)

Introduction

On November 9, 1989, the Berlin Wall fell, marking the start of a process that over the past 30 years has reunited a country divided by much more than a wall. Living under very different regimes and with different identities since the military division of the country (Redding & Sturm, 2008), West and East Germany stood at the border between capitalism, democracy, and the West on one side, and a command economy, socialism and the old Soviet world on the other (Kim & Robertson, 2002). Between 1961 and 1989, movement between East and West Germany was extremely dangerous, with a heavily fortified border that stretched the length of the country; 938 people are believed to have been killed while attempting to cross from East to West Germany (Spijkerboer et al., 2007). With the fall of the Wall, there was no longer any risk to movement, and people could travel freely. This raises the question as to what unseen or non-material forces would keep people in the East when there were better material conditions and superior financial opportunities available in the West.

Indeed, immediately after the Wall came down, several thousand people quickly moved from East to West, seeking improved prospects and leaving behind the restrictions of the East for a new life in the West. However, after the first rush of movement, emigration tapered off and total figures indicate that by the end of 2007, "cumulative net migration amounted to 1.7 million persons. This relates to a remarkable share of [sic] 10.3% of the original East German population

at the beginning of 1989" (Wolff, 2009, p. 4). Thus, while approximately 10% emigrated, the large majority of East Germans were not willing to relocate and leave behind their old identity, old loyalties, and deep bonds to their community.

Material incentives too will have played a major role in individuals' emigration decisions. As pointed out by Fuchs-Schündeln and Schündeln (2009), for policy reasons it is important to consider why most East Germans stayed, as there was and still is a very real concern about depopulation of certain areas of East Germany. Uhlig (2006) notes that "[i]t seems likely that the large fiscal transfers acted as a "bribe" to the East Germans to stay where they were, keeping them from competing against West Germans for jobs at lower wages, or to lure West Germans to come" (p. 383). After reunification, real wages increased dramatically relative to productivity, and unemployment increased (Merkl & Snower, 2008). Unemployment in the East German labour market almost doubled from 10 per cent to 20 per cent between 1991 and 2004 (Snower & Merkl, 2006).

Not surprisingly, over the past three decades, numerous studies have focused on analysing the German reunification (see, e.g., Torgler, 2003; Frijters et al., 2004, 2005; Fuchs-Schündeln & Schündeln, 2005; Burda, 2006; Alesina & Fuchs-Schündeln, 2007; Uhlig, 2006, 2008; Redding & Sturm, 2008; Burchardi & Hassan, 2013; Gossmann et al., 2017). In this study we take a different angle, by suggesting that East Germans may have chosen to stay in part due to a desire to maintain connection to their communities, held by strong social ties, thick bonds to their existing networks, and/or loyalty to their identity as East Germans. The sudden and unexpected opportunity for increased material benefit by moving to the West was in competition with "the old patterns of belief and affiliation" Schaar (1968, p. 468). In the face of the rapidity with which West German social, economic, and political institutions changed East German identity and culture following the collapse of the Berlin Wall, the majority of East Germans chose to stay in their communities. For some, East German loyalty might have been a stronger incentive than economic opportunity. Ockenfels and Weimann (1999, p. 277), for example, note that many people in the eastern part of the country "miss the solidarity and cooperative spirit which developed in times of dictatorship", a phenomenon in the old East Germany called "Ostalgia" (Godeanu-Kenworthy, 2011)[1]. For others, stronger motivations may have arisen from their immediate social networks and bonds with their communities.

Non-monetary bonds and opportunities

Migration and movement of populations have been – and continue to serve as – key decisive forces in history (Park, 1928). A large body of literature on migration dates back more than 100 years, with a common avenue of inquiry aiming to identify the forces that affect migration. For example, in the article The Laws of Migration, Ravenstein (1885) discussed the extent of movements throughout the UK to identify potential rules or laws that govern migration. The core focus of this literature (Stark, 1991) has centred on labour migration – for example, rural-to-urban labour migration (Harris & Todaro, 1970). Economists have also measured the costs and returns of migration by applying human capital theory (Sjaastad, 1962). Commonly, migration is modelled using an expected utility framework, where the expected future utility in the current location is calculated as a function of aspects such as the probability of employment. The difference between this and the expected future utility offered by the destination location is determined, less any fixed costs, such as the monetary costs of reallocation, and this forms the focal migration incentive (Fuchs-Schündeln & Schündeln, 2009).

More recently, greater emphasis has been given to non-monetary fixed costs such as marital status and family size, or the potential psychological costs of migration (Rainer & Siedler, 2009; Fuchs-Schündeln & Schündeln, 2009). As Fuchs-Schündeln and Schündeln (2009) point out, "[t]hese non-monetary costs should be higher when the social ties of an individual in the origin region are stronger, while social ties or the existence of networks in the destination region would lower these costs" (p. 714). Previous research has focused on such social networks to understand East-West migration decisions after the reunification of Germany. For example, past analysis suggests that the presence of family and friends in the West increases the likelihood of emigration to the West, and the opportunity to secure full-employment increases the ability to integrate (Rainer & Siedler, 2009). However, prior research has also found that feeling more tied to the current local community reduces the probability of moving (Fuchs-Schündeln & Schündeln, 2009). In addition, Fuchs-Schündeln and Schündeln (2009) observe that a more pessimistic view of the future reduces the probability of moving. Such attempts to introduce non-monetary factors are consistent with behavioural economics' extensions of the utility model to include wealth and morality, and thereby to recognise the moral costs associated with an action (Levitt & List, 2007). The extended function giving rise to individual incentives also may encompass aspects such as love, desire, worshipping, emotional regulation, groups and networks (Frijters with Foster, 2013), or an identity that defines how people think they or others should behave (Akerlof & Kranton, 2010). For example, loving others means incorporating others into a person's sense of self (Frijters with Foster, 2013, p. 104). Identities and norms are derived from the social setting and can be powerful sources of motivation, inducing losses in utility when deviating from the expected norm (Akerlof & Kranton, 2010). Each of these potential extensions to the standard utility model represents the inclusion of non-monetary motivators, bringing emotions, passions, and social institutions into economics.

Rather than analysing key motivators of individuals' decisions to migrate to a new place after a major historical shock, we explore what induced people to stay in their communities

[1] For example, see the movie Good Bye Lenin! for a portrayal of the assimilation of former East Germans into the West, sometimes seen as the first mainstream admission of Ostalgia.

after German reunification. In this study we aim above all to further understand whether or how non-monetary bonds increase the likelihood of staying in the East when controlling for other standard motivations more traditionally proposed by economists, such as monetary opportunities.

Those persons free of loyalty towards or bonds to others within their community are more prone to leave (see, e.g., Hirschman, 1993). Research in the area of human geography, for example, highlights the relevance of contextual factors such as family relations, or formal and informal institutional structures more broadly, for human behaviour (Reuschke, 2014). We are particularly interested in identifying potential proxies for loyalty and attachment. Loyalty can be defined as "a feeling of attachment to something outside of the self, such as a group, an institution, a cause, or an ideal... [which] occupies the ground between patriotism and obligation" (Schaar, 1968, p. 484). Hirschman (1970) suggests that loyalty is not at all irrational, and in fact can serve a socially useful purpose when there is no barrier to exit, as was the case after the fall of the Wall. The presence of loyalty can lessen the degree of social deterioration that might otherwise occur when all are free to leave. Indeed, as mentioned above, the majority of residents remained "loyal" to East Germany, judging by their decision not to emigrate, when barriers to emigration were removed. Reflecting on the use of his theory of voice and exit in the analysis of the unification of Germany, Hirschman (1993) concludes that exit does not require any coordination with others: exit is a private act, and a private good in that nobody can do it for you, and thus there is no free-riding. By contrast, voice is a public activity. Hirschman conjectures that "those unburdened by feelings of loyalty will be prone to exit, while the loyalists will resort to voice" (Hirschman, 1993, p. 197). To measure individuals' tendencies towards using voice, we explore their participation in local politics. We hypothesise that a higher participation in local politics increases the probability of staying in the East.

Brown and Perkins (1992) write that place-based attachments "reflect the behavioral, cognitive, and emotional embeddedness individuals experience in their sociophysical environment" (p. 279). Over the past several decades, an increasing stream of research has explored human attachments to place, focusing on aspects such as personal relationships and interactions between residents, human identity, emotion, and life satisfaction (Gilboa & Herstein, 2012). An attachment to place is a sign of stability and long-term (social) bonds within homes and communities, involving aspects such as familiarity, security, and loyalty (Brown & Perkins, 1992; Gilboa & Herstein, 2012), and has been defined as a "positive bond, emotional in content, between groups or individuals and their environment" (Gilboa & Herstein, 2012, p. 143). Having high levels of secure interpersonal attachment reduces anxiety, while social bonding and identity encourage community involvement (Manzo & Devine-Wright, 2013; Cuba & Hummon, 1993). Attachment to natural places has been found to encourage pro-environmental cooperation (Scannell & Gifford, 2010) and is strongly affected by social factors (Gilboa & Herstein, 2012). Moreover, the attachment and loyalty that individuals feel with respect to a specific group strengthen their definitions of themselves and are crucial to a sense of identity and belonging (Druckman, 1994). Social ties in the form of personal relationships between individuals based on non-materialistic considerations have been linked to positive regional economic growth in Germany after the reunification (Burchardi & Hassan, 2013), which is consistent with a large literature on social networks and social capital. Being part of a group fulfils psychological needs and gives individuals a sense of belonging, identification, and identity. "Identification" denotes a particular emotional tie (Simon, 1997). Freud (1922, p. 66), for example, emphasises identification as a fundamental mechanism of group cohesion: "We already begin to divine that the mutual tie between members of a group is in the nature of an identification of this kind, based upon an important emotional common quality; and we may suspect that this common quality lies in the nature of the tie with the leader".

The degree of involvement in a church or religious organisation is one potential dimension through which community bonds are both formed and reflected. Loyalty may be particularly strong among churchgoers. A core function of a church is to ensure that its values are internalised and incorporated in adherents' daily activities, as there is no logical necessity for an individual to make decisions unmonitored by the church in ways that are consistent with the values that the church communicates or encourages. The values of a successful church become fundamental to churchgoers' personal identities, defining who they are and prescribing the correct and desirable behaviour for the individual. Internalisation of those values encourages loyalty. Religious organisations thus act as "supernatural police" (Anderson & Tollison, 1992), ensuring followers act in line with their accepted rules and values. Simon (1997, p. 284) proposes that a person identifies herself with a group when she considers choice alternatives in terms of consequences for that specific group to which she belongs. In our context, identification with the church could shape the decision of whether or not stay in East Germany and may even help economise or simplify actions (Torgler, 2006). We include a variable capturing church attendance in our analysis, as it indicates that people actually spend time in a church, a behaviour that supports enforcement of the church's norms. Iannaccone (2002, p. 209) points out the importance of looking at actual behaviour (in contrast to stated affiliation) as attendance takes time and incurs opportunity costs by precluding other activities. We hypothesise that individuals who more frequently attend church or other religious events are more likely to stay in East Germany – where their churches are located – after the fall of the Wall.

Bonding, however, is not confined to the church setting; it is expected to develop in all types of "club"-style social formations. We therefore also consider engagement in sports activities. The literature on sports and bonding or belong-

ing has mostly focused on the social integration of minority youth (see, e.g., Walseth, 2006). Sports membership or activity may reinforce identity through participants receiving group-mediated approval or status due to performing well, and through the conduct of symbolic rituals that enhance group identification (Weiss, 2001). The question on sports activities from the German Socio-economic Panel (GSOEP) that we use in the empirical analysis is unfortunately too broad to identify the extent to which individuals' sporting activities are actually social. Some may be in-home activities like using treadmills and workout equipment. However, for people resident in East Germany when the Wall fell, we have reason to believe that our measure largely picks up social sporting activities. Before the reunification, East and West Germany had two different sport systems (for a discussion, see Kostermann & Nagel, 2014). East Germany put a lot of emphasis on promoting elite sport as a political and ideological instrument to indoctrinate "good socialists". The focus was on competition in the mass sports movement, which was a centrally installed political construct organised by institutions loyal to the regime. By contrast, the West German system was more decentralised, autonomous, informal, and leisure-oriented, and less focused on traditional competitive sports. Putnam (2000) points out that newer, increasingly popular sports are less social than traditional team sports. The sports infrastructure in West Germany was developed to meet more contemporary circumstances and demands – including less-social sports – and the available options could have been attractive to East Germans interested in sports. Relative to the East, the West provided more variety in sports activities and a broader access to sport, which may have enhanced the attractiveness of West Germany for those interested in sport. It is true that after reunification, the East German system reoriented to resemble that of the West, but this transition required time. As Kostermann and Nagel (2014) point out, "[e]ven though the transformation process was launched immediately – particularly in the field of sport – they were confronted with a sport system that was organized completely differently, and they needed time to reorient themselves… some time was needed to modernize the sport infrastructure in eastern Germany and to improve the availability of sport facilities" (p. 630). This would suggest that the more East Germans are involved with sports (measured by the GSEOP variable capturing participation in sports activities), the less likely it is that they will stay in the East after reunification. However, on the other hand, sport is also often a social activity (particularly in East Germany) and therefore involvement in sporting activities is indicative of the presence of social ties that would keep people in East Germany. Thus, the direction of the effect could go both ways which also justifies an empirical exploration.

Similarly, the socialist cultural environment in East Germany affected activities such as music and cinema, which were firmly in the hands of the central government. For example, jazz was banned in the Soviet Union from 1946, and was also officially prohibited in the GDR as it was seen as an "insidious vanguard of Americanization" (Fay, 2004, p. 14) or "'soulless' entertainment from the West" (Raundalen, 2005, p. 72). State cultural policies were oriented almost exclusively toward East German audiences (see, e.g., Allmendinger & Hackman, 1996, who investigate symphony orchestras). Thus, we hypothesize that those in the East who more actively attend cinema, pop, or jazz concerts find it less attractive to stay in the East due to the better infrastructure and larger supply of cultural events and activities in the West during the transition process.

At the personal level, a sense of duty to one's immediate circle of family and friends may affect whether or not someone emigrates. As a proxy for this unseen sense of duty, we use the level of observed helping behaviours directed towards family and friends. In the East before reunification, helping family and friends was seen as a highly regarded societal responsibility and a sign of desirable social capital. Strong tendencies or values towards helping may still be fulfilled when separated from friends and family (e.g., through financial remittances or frequent returns to the place of origin). Friends and family members of those residing in the East at the point of reunification may even be in West Germany. Thus, as there are arguments in both directions, we hypothesise that helping family and friends should not be unrelated to the emigration decision, but we are agnostic as to the direction of the effect.

Data and methodology

We use data for the years 1990, 1992, and 1994 from the German Socio-economic Panel (GSOEP) to form an unbalanced panel (Schupp & Wagner, 2002; Goebel et al., 2018). Records on the social behaviour variables of interest are not available for 1989, 1991, and 1993, motivating our use of bi-annual records. The GSOEP data have been collected each year since 1984, although East Germans were not included until after reunification. The first sample of respondents from East Germany was included in June 1990 to capture the effect of the significant social and political changes that were taking place in the country. Thus, this sample was taken after the border was opened but before the monetary, social, and economic unification of East and West Germany (Schupp & Wagner, 2002). The GSOEP dataset is representative, covering a total of around 11,000 households. The advantage of GSOEP is that it follows the same people over time and allows identification of where East German residents lived before reunification, enabling us to ascertain who moved from East to West and who stayed in the East. The reunification of Germany provides a unique natural experimental setting, as the event was not expected (Redding & Sturm, 2005; Frijters et al., 2005), it happened quickly (Frijters et al., 2004), the country had a shared history up until the end of World War II, both sides still shared a language (Ockenfels & Weimann, 1999), and the institutions and democracy of the West were quickly transplanted to the East, with norms in the East also adjusting relatively quickly, particularly for the younger co-

horts (Torgler, 2003; Feld et al., 2008; Lenhart, 2018). Owing to these features of the context, it is possible to avoid the usual problems with cross-cultural studies that arise due to different 'types' of people living in the two locations (Ockenfels & Weimann, 1999), which affects the generalisability of results: "for methodological reasons, the identification of cultural influences is very difficult, particularly in the case of observed behavior" (Ockenfels & Weimann, 1999, p. 276).

Our analysis uses lagged measures of social behaviours to study the decisions of East Germans who do not move from East to West Germany after the fall of the Berlin Wall on November 9, 1989, during the subsequent reunification of East and West Germany over the course of several years. All individuals in our sample identify as living in East Germany in 1989. This sample of East Germans is drawn from the GSOEP (Goebel et al., 2018) using the PanelWHIZ software (Hasken-DeNew & Hahn, 2010). As a dependent variable, we focus on the decision to stay in East Germany, which is inferred from the residency (East or West Germany) of the individual in 1992 and 1994[2]. Of the 4,576 individuals from 2,074 previously East German households in the GSEOP as of the 1989 survey year, 131 individuals from 119 households had moved to West Germany by 1992 (an emigration rate of 3.45%)[3], while no individual in our sample moved from East Germany to West Germany between 1992 and 1994.

Our core independent variables are lagged in our regression models, and consist of the frequency of the following GSEOP-nominated activities: 1) attend cultural events, 2) attend cinema, pop, jazz concerts, 3) participate in sports, 4) attend social gatherings, 5) helping relatives/friends, 6) participate in local politics, and 7) attend church or other religious events. The response scale on frequency of attendance runs from 1 to 4 (4=every week, 3=every month, 2=less frequent, 1=never)[4]. In Table 1 we report differences in the lagged variables (i.e., as measured in 1990 or 1992) between movers and non-movers when both groups still live in East Germany. As controls, we add socio-demographic and socio-economic factors to control for both opportunity costs and fixed costs.

On average, future movers more frequently attend events such as "cinema, pop, jazz concerts" and more frequently participate in sports or attend social gatherings. With respect to these variables, the differences between future movers and future non-movers are highly statistically significant. These trends are consistent with our earlier arguments regarding better infrastructure opportunities in the West. Future movers are also more likely to attend "cultural events," although the difference is not statistically significant at the 10% level. Those who more often provide a helping hand to relatives and friends are also more likely to move, although the difference is only statistically significant at the 10% level. On the other hand, those who go on to move are less active in local politics, and in attending church or other religious events; such results are in line with our predictions. In both cases, however, the difference is not statistically significant.

As for the controls, we find that movers are substantially younger than non-movers. Older people might be more risk averse (Torgler, 2007) and may have more to lose or less to gain in both material and non-material (e.g., social identity and loyalty) dimensions by defecting or emigrating (Wolff, 2009), which might influence them to stay. We can also make a standard economic argument that the young enjoy greater net benefits of moving as they have more expected years of life in which to enjoy the benefits and recoup the costs of relocating. There are two age effects operating: a life cycle or aging effect due to being at a certain stage of life, and a cohort effect resulting from belonging to a specific generation (Torgler et al., 2018). It might be that a cohort effect is relevant here, with generations who were strongly socialised with symbols and identity of East Germany preferring to maintain their loyalty and connection to that identity. Torgler (2003) finds that older cohorts were slower in adjusting to the West with respect to their norms after the reunification. Moreover, individuals with more children or with disabilities face a bigger burden when moving, but may benefit from a better health infrastructure in West.

Although people who stay in East Germany are significantly more likely to be disabled and/or not employed, the income and educational[5] differences between movers and non-movers are not very large. It could be that those with higher incomes face lower marginal gains from emigrating while at the same time facing lower transaction costs in moving to the West – for example, due to having better social networks. Later, we will see that those with higher education demonstrated a higher tendency to stay, in line with the modestly higher average education of non-movers relative to movers shown in Table 1. In contrast, Fuchs-Schündeln and Schündeln (2009) find a positive relationship between education and moving, but one that only holds for younger people. As expected, married people are more likely to stay while singles are more likely to move. Such results are consistent with Fuchs-Schündeln and Schündeln (2009).

[2]Given the bi-annual frequency of the records, the emigration could take place between 1990 and 1992, or between 1992 and 1994 (if an individual remained in East Germany in 1992, but then moved before 1994). Additionally, the sample of survey participants either resided in East Germany or moved to West Germany in 1992 and 1994. East Germans who moved to some place other than West Germany were not included in the GSEOP survey.

[3]Heiland (2004) reports migration trends combining data from the Statistisches Bundesamt (Federal Statistical Office) from 1991 to 2002 and the Zentrales Einwohnerregister of East Germany (Residence Department of the German Democratic Republic) between 1989 and 1990, and observes an emigration rate of 1.04% at that early point.

[4]We initially assume cardinal coding of the behaviour variables, and then conduct robustness tests with ordinal-coded behaviour variables in which we account separately for each level of social participation (see Tables 6 and 7).

[5]Measured in number of years of completed education.

	Non-Movers		Movers			
Variable	**Mean**	**Std. Dev.**	**Mean**	**Std. Dev.**	**Diff.**	**t-test**
Socio-economic						
ln(Yearly income)	9.956	1.326	9.987	1.619	0.031	(0.21)
Full-Time Employment	0.595	0.491	0.642	0.481	0.047	(1.07)
Not Employed	0.176	0.381	0.000	0.000	-0.176***	(-37.94)
Near Retirement, Zero Working Hours	0.031	0.172	0.057	0.233	0.026	(1.25)
Disability	0.024	0.153	0.000	0.000	-0.024***	(-12.88)
Demographic						
Age	41.836	16.238	23.775	7.172	-18.061***	(-27.37)
Female	0.529	0.499	0.520	0.502	-0.008	(-0.18)
Years of Education	11.880	2.295	11.492	1.516	-0.388**	(-2.78)
Number of Children in household	0.800	0.957	0.659	0.922	-0.141+	(-1.68)
Married	0.715	0.451	0.179	0.385	-0.536***	(-15.26)
Single	0.166	0.372	0.756	0.431	0.590***	(15.08)
Divorced	0.058	0.235	0.049	0.216	-0.010	(-0.49)
Separated	0.004	0.067	0.016	0.127	0.012	(1.03)
Social Behaviours						
Attend Cultural Events	1.694	0.671	1.789	0.704	0.095	(1.48)
Attend Cinema, Pop, Jazz Concerts	1.913	0.849	2.902	0.918	0.990***	(11.87)
Participate in Sports	1.610	1.034	1.966	1.183	0.356**	(3.24)
Attend Social Gatherings	2.873	0.827	3.252	0.826	0.379***	(5.04)
Helping Relatives, Friends	2.466	0.830	2.610	0.785	0.144*	(2.01)
Participate in Local Politics	1.217	0.599	1.198	0.542	-0.019	(-0.38)
Attend Church or Other Religious Events	1.358	0.735	1.314	0.646	-0.044	(-0.74)

Note: Two-Sample t-test assuming unequal variances. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

Table 1. Comparison of east german non-movers versus movers: Descriptive statistics of those identifying as located in East Germany in 1989

Regression analysis

As a baseline model we employ a linear probability model (1) taking the form:

$$EW_{it} = C + \beta_1 X_{i(t-2)} + \beta_2 SB_{i(t-2)} + \beta_3 SB_{i(t-2)} * X_{i(t-2)} + \varepsilon_{it} \quad (1)$$

EW_{it} Not moving from East to West Germany: $\{0,1\}$
C Constant
$X_{i(t-2)}$ Lagged individual demographic and socio-economic variables
$SB_{i(t-2)}$ Social behaviour variables
$SB_{i(t-2)} * X_{i(t-2)}$ Interactions of selected demographic variables with social behaviour variables
ε_{it} error term,

where an East German making the decision to not move to West Germany in 1992 or 1994 (EW_{it}) is a function of a constant (C); demographic (i.e., age, gender, years of education, marital status, and number of children in household) and socio-economic (annual household income (in log) and employment status) variables specific to the individual ($X_{i(t-2)}$); the frequency of social behaviours, including participation in sport, concerts, and social gatherings with and without family ($SB_{i(t-2)}$); interactions of income, age, gender, education, and number of children in the household, with each social behaviour ($SSB_{i(t-2)} * X_{i(t-2)}$); and unobservables manifested in an error term (ε_{it}). All independent variables are lagged values obtained via the survey from two years prior ($t-2$). As individuals may come from the same household and the survey records repeated observations for the same individuals over the time, we clustered the standard errors at the household level in the regressions[6]. We will present results with and without interaction effects. The estimated interaction effects will offer insights as to how the association of social behaviours with the choice to remain in East Germany varies across people facing different circumstances. We check the robustness of the results using a probit model, because linear

[6]The results remain robust with no change to the levels of statistical significance in regressions in which standard errors are clustered at the individual level. Additional results are available in the Online Appendix.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Attend cultural events	-.0037							.0074*
	(.0026)							(.003)
Attend cinema, pop, jazz concerts		-.0237***						-.026***
		(.0029)						(.0036)
Participate in sports			-.0057**					.0012
			(.0019)					(.002)
Attend social gatherings				-.0098***				-.0031
				(.0022)				(.0024)
Helping relatives, friends					-.0037+			.0012
					(.0019)			(.002)
Participate in local politics						9.4e-04		.0021
						(.0025)		(.0024)
Attend church or other religious events							.0014	-5.5e-05
							(.002)	(.002)
Constant	.9882***	1.028***	.9917***	1.01***	.9911***	.9809***	.9802***	1.021***
	(.0046)	(.0046)	(.0031)	(.0059)	(.0046)	(.0035)	(.0034)	(.0081)
N	6805	6800	6729	6823	6846	6740	6770	6616
Clusters	2005	2006	1999	2006	2006	2002	2004	1995
Prob. > F	0.155	0.000	0.003	0.000	0.051	0.701	0.470	0.000
R^2	0.000	0.024	0.002	0.004	0.001	0.000	0.000	0.026

Note: Dependent variable = *Did not move from East to West Germany*. Variables on social behaviours are based on the answers from the survey two years prior. Standard errors (clustered at the household level) are in parentheses. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

Table 2. Regression results for the association of social behaviours with not moving from East to West Germany

probability models can return predicted probabilities outside the unit interval, although they work well for values of the independent variables that are near the averages in the sample (for a discussion, see, e.g., Wooldridge, 2003).

We first explore the association between social behaviours and not moving (see Table 2), focusing on each of the social behaviours individually (see specifications (1) to (7)), and then adding them jointly into the specification (see (8)). These first results are produced without controls. As evident in the descriptive analysis, more participation in sports, entertainment, or social gatherings is associated with a reduction in the probability of staying. The coefficients on all of these variables are statistically significant when the variables are included individually. We observe the strongest effect for attending entertainment, in the form of cinema, pop, or jazz concerts. The coefficient indicates that increasing the frequency unit by one is associated with an increase in the probability of moving by more than 0.02. As for the other variables, increased frequency of helping behaviour is associated with a lower probability of staying, but the coefficient is only statistically significant at the 10% level. The coefficients for the frequencies of church and political participation are positive, indicating an increased likelihood of not moving to the West, but are not statistically significant.

As a robustness check, we report results in Table 3 after deleting data from 1994, as no one moved to the West that year. The previous results remain robust, although interestingly, the coefficient for political participation is now statistically significant at the 10% level. The probit results (Table 4 and 5) show very similar outcomes. For example, increasing the frequency of participating in an entertainment activity is associated with reductions in the probability of staying by 1.86 and 3.41 percentage points for the two samples, respectively (see Table 4 and 5, specification (8)). However, when including all the social behaviour data together in the same specifications, the results with respect to attendance at cultural events generally (exclusive of attending cinema, pop, and jazz concerts, or attending social gatherings) suggest increased probability of remaining. This result is evident in both Table 2 and Table 3. It is possible that in East Germany, these cultural events were the context in which "ties that bind" were formed. Such events were potentially related to shared political ideology – perhaps even to the use of voice or loyalty discussed by Hirschman (1970, 1993) – rather than shared interests in the performing arts or maintaining family connections.

So far, our analysis has assumed ordinality in the independent variables capturing social behaviours. However, with responses to the questions about social behaviours coded as

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Attend cultural events	-.0018							.0076*
	(.0048)							(.0057)
Attend cinema, pop, jazz concerts		-.0419***						-.0466***
		(.0053)						(.0065)
Participate in sports			-.0112**					.0011
			(.0036)					(.0039)
Attend social gatherings				-.0165***				-.0075+
				(.004)				(.0044)
Helping relatives, friends					-.0015			.0072*
					(.0032)			(.0036)
Participate in local politics						.0068+		.0069+
						(.0037)		(.0037)
Attend church or other religious events							.0034	-2.1e-04
							(.0038)	(.0038)
Constant	.9681***	1.049***	.9838***	1.013***	.9691***	.9563***	.9606***	1.024***
	(.0091)	(.0088)	(.0059)	(.0109)	(.0088)	(.0064)	(.0066)	(.0147)
N	3513	3511	3451	3521	3536	3467	3484	3387
Clusters	1873	1873	1858	1876	1882	1862	1870	1842
Prob. > F	0.713	0.000	0.002	0.000	0.643	0.068	0.367	0.000
R^2	0.000	0.039	0.004	0.006	0.000	0.001	0.000	0.047

Note: Dependent variable = *Did not move from East to West Germany*. Standard errors (clustered at the household level) in parentheses. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

Table 3. Regression results without 1994 observations

they are (4: weekly, 3: monthly, 2: less frequently, 1: never), the importance to the stay-or-leave decision of a one-unit change could be different depending on the starting value. To allow for this, we dummy-coded the values of the behaviour variables and repeated our analysis. Results are shown in Table 6, where we do indeed see differences across the dummy variables in both coefficient size and statistical significance. In particular, the probability of staying in the East significantly decreases non-linearly as Easterners participate in more helping behaviours with friends and family. We see a similar result for the frequency of sporting engagement. These results are in addition to the strong moving effect we previously saw from more frequent attendance at entertainment events. For all of these social behaviours, the highest frequency of participation is associated with the highest probability of leaving East Germany.

It may be that more well-off individuals engage in more of the social behaviours we measure here and also find it more appealing to move away from East Germany. Hence, we explore what happens to the estimates on the coefficients for our core factors when including the demographic and socio-economic controls. In Figure 1 we show linear probability results with controls (red) and without controls (blue) indicating that the results presented in specification (8) of Table 2 remain robust after adding the controls, although the effect size for attending entertainment activities decreases[7]. As for the controls, we also find evidence supporting the descriptive analysis. Age is positively correlated with staying. Holding other factors constant, the number of children in the household is positively correlated with staying, and married people are also more likely to stay compared to those who are widowed or single. Finally, consistent with the descriptive statistics shown in Table 1, the income and gender of stayers and movers are not significantly different. To assess whether students were driving the effect of social behaviours on East-West German migration, we re-examine the results from Table 2 by excluding from the sample those who were identified as students (via an observed increase in self-reported years of education between survey waves) (Table 8) and, alternatively, by excluding households of which at least one member was a student (Table 9). Students may play a significant role in migration patterns, as there were fewer opportunities for study in East Germany and many university departments in the East required restructuring after reunification. We find that the estimated coefficients on frequency of cinema attendance, social

[7]Regression tables for the coefficient plots are available from the authors.

gatherings, and participation in sports (though statistically weaker) remain robust to these sample exclusions[8].

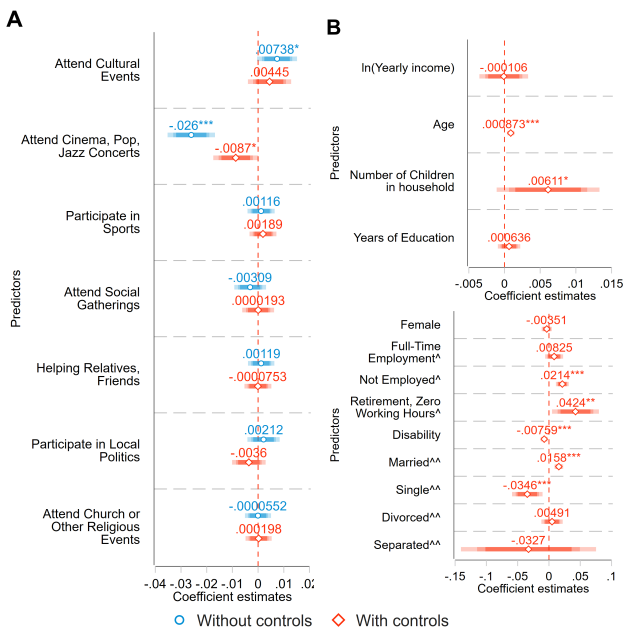

Figure 1. Linear probability regression results for the association of social behaviours with the decision not to move from East to West Germany, with demographic and socio-economic controls.

[Note: Dependent variable = *Did not move from East to West Germany*. Estimates from specification (8) in Table 2 are in blue, while estimates of an otherwise identical specification but with controls are in red. Panel A shows estimates for social behaviours, and Panel B shows estimates for the control variables (n=6,616, clusters=1,995, $R^2 = 0.058$). Reference groups are ^employed part-time and ^^widowed. Standard errors are clustered at the household level. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively. Bands of successively weaker colour shades depict 90%, 95% and 99% confidence bands, respectively.]

In the following figures we report results for the interaction effects between our social behaviour variables and demographic and socio-economic factors, looking at age (Figure 2), gender (Figure 3), number of children (Figure 4), level of education (Figure 5), and being married (Figure 6). Figure 2 shows that age reverses the association of participation in entertainment and the "move" decision: people who are older and more frequently attend entertainment events are less likely to move, a result that is highly robust, as can be seen when we add the controls. By contrast, young people who are active cinema, pop or jazz concert goers are more likely to emigrate to the West. For instance, using the estimates of the *Attend Cinema, Pop, Jazz Concerts* variable ($\hat{\beta}_2 = -0.0426$) and its interaction term with *Age* ($\hat{\beta}_3 = 0.000906$) from the regression model with controls presented in Figure 2, a 70-year-old attending one frequency unit more of these events would be 0.021 probability points more likely to stay relative to baseline, with the analogous result for a 20-year-old being -.024. The opposite pattern with respect to age is found for participation in cultural events, although the coefficient of the interaction is not statistically significant when adding controls. The effect of sports activities depends on gender, as shown in Figure 3. For sports activities, being more active is associated with an increased probability of choosing to stay, but only for women. Figures 3 through 6 show that having more children or being married erases the positive association between more frequent participation in entertainment and the likelihood of moving to the West, while more education negates the association between more frequent attendance at church and a higher likelihood of staying. Many of these interaction effects speak to the loyalty effects and bonds to East Germany. For example, being older (with a longer history *in situ*) or having a family and engaging more in entertainment signals the presence of deeper bonds and connections to one's immediate community.

Lastly, we explore a triple interaction focusing on gender, age, and social behaviour, suspecting that the mild gender effect observed above could be due to heterogeneous effects by gender of social behaviour variance over different ages. Specifically, in Figure 7 we report the marginal effects of gender on the decision to stay in East Germany over individuals' ages and their levels of engagement in various social behaviour. While the results indicate that older women (above 55 years old) are less likely to move than are men in general, such a gender effect is larger if they are more actively engaged in cultural, political, or entertainment activities and social gatherings, and less actively engaged in sports activities[9]. This is not surprising, as women are often more active than men in both providing and receiving and giving support from/to their networks[10] (Antonucci & Akiyama, 1987), and this could mean they are more deeply connected to their communities through greater levels of social cohesion (Momtaz et al., 2014) – connections that are reflected more for women than men in our measures of these social behaviours. On the other hand, the gender difference is smaller for the probability of moving for older individuals with a stronger involvement in helping activities within their close environment (family and friends), perhaps indicative of a likelihood that the woman will follow her (younger) family if they move (for example, to care for grandchildren).

Figure 7 also shows that young women who are highly involved in political activities are more likely to move than

[8] We are thankful to a reviewer for the suggestion to perform these tests. Further results looking at age above and below 30 in 1989 are available upon request.

[9] The likelihood of moving is similar between genders for older individuals more engaged in sports, attending fewer social gatherings, and more frequently attending church.

[10] Robustness tests indicate that older women are more likely to help friends and family, but this does not hold for younger women who have more children (results available upon request from the authors). They are possibly too busy caring for children, and hence do not have the same time availability for helping family and friends.

Figure 2. OLS Regression results for the association of social behaviours and their interaction with age with not moving from East to West Germany.

[Note: Dependent variable = *Did not move from East to West Germany*. Each same-colour set of results is from a separate regression. Estimates of specification (8) in Table 3 are in blue. Red (no controls) and green indicators (with controls) show the estimates of coefficients on social behaviours (Panel A) and social behaviours interacted with age (Panel B) for the interacted models. Estimates for controls are not shown but are available upon request from the authors. Sample size is the same across all specifications; R^2 for models with age interaction effects (red) and with controls (green) are 0.048 and 0.064, respectively. Standard errors are clustered at the household level. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively. Bands of successively weaker colour shades depict 90%, 95% and 99% confidence bands, respectively.]

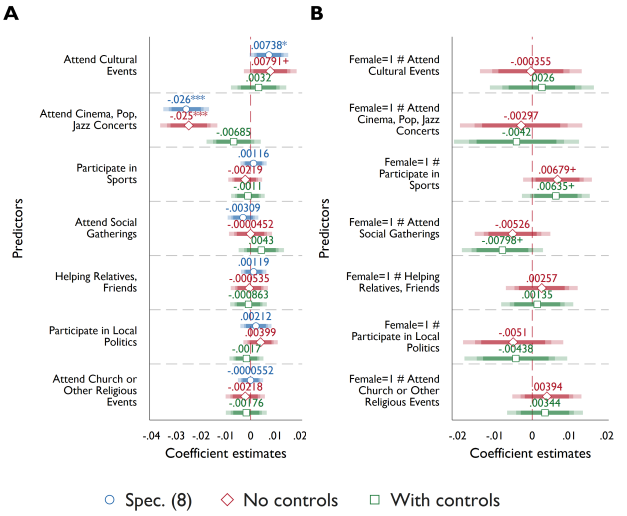

Figure 3. OLS Regression results for the association of social behaviours and their interaction with gender with not moving from East to West Germany.

[Note: Dependent variable = *Did not move from East to West Germany*. Each same-colour set of results is from a separate regression. Estimates of specification (8) in Table 3 are in blue. Red (no controls) and green indicators (with controls) show the estimates of coefficients on social behaviours (Panel A) and social behaviours interacted with age (Panel B) for the interacted models. Estimates for controls are not shown but are available upon request from the authors. Sample size is the same across all specifications; R^2 for models with gender interaction effects (red) and with controls (green) are 0.028 and 0.059, respectively. Standard errors are clustered at the household level. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively. Bands of successively weaker colour shades depict 90%, 95% and 99% confidence bands, respectively.]

their male counterparts (although this effect is not statistically significant), whereas the opposite is true for older women. This may indicate that the nature of the political activity of different age cohorts of women at this moment was different, with young women more likely to support West-oriented movements, which then fed into their emigration decisions.

Conclusion

This study has analysed a sub-sample of data from the German GSOEP longitudinal panel to discover whether there is any evidence of unseen social bonds affecting decisions not to migrate to West Germany during the years immediately after reunification. It is interesting to note where unseen or non-monetary bonds exert staying power on the majority of East Germans. This is particularly relevant as the world looks towards the 30th anniversary of the fall of the Berlin Wall, at a time when migrations are taking place on every continent and immigration is a prominent political issue. The remarkable and unique natural experiment of German reunification gives us an insight into the factors and interactions that influence staying in the home environment.

Using social behaviour variables available in the GSEOP, we test whether the frequency of participation in behaviours that are likely to reflect social bonding or loyalty – or other signals of the strength of local social bonds – are associated with the decision to emigrate. Unconditional results indicate that those with more frequent participation in entertainment and sport, and those who participate more in social gatherings, are more likely to leave. This is particularly true for young people who participate frequently in entertainment activities, a result that is robust to the inclusion of controls.

However, once we specify a more flexible model that allows for a different effect size for those with demographic indicators of stronger family bonds (e.g., having children or being married), we find that those with stronger family bonds who participate more frequently in entertainment activities

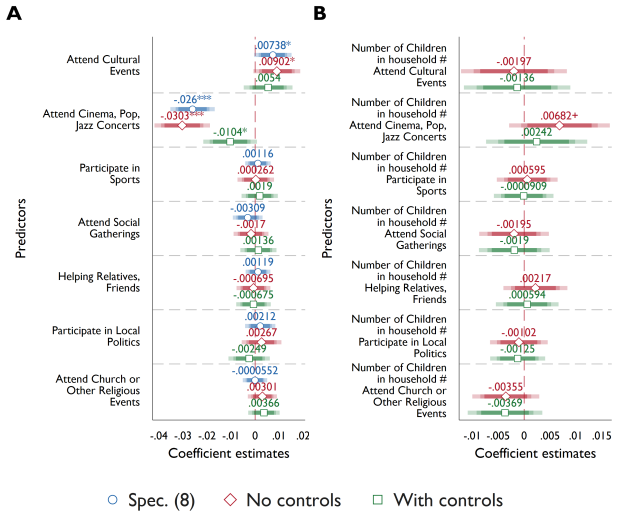

Figure 4. OLS Regression results for the association of social behaviours and their interaction with number of children in household with not moving from East to West Germany.

[Note: Dependent variable = *Did not move from East to West Germany*. Each same-colour set of results is from a separate regression. Estimates of specification (8) in Table 3 are in blue. Red (no controls) and green indicators (with controls) show the estimates of coefficients on social behaviours (Panel A) and social behaviours interacted with age (Panel B) for the interacted models. Estimates for controls are not shown but are available upon request from the authors. Sample size is the same across all specifications; R^2 for models with number of children interaction effects (red) and with controls (green) are 0.029 and 0.058, respectively. Standard errors are clustered at the household level. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively. Bands of successively weaker colour shades depict 90%, 95% and 99% confidence bands, respectively.]

Figure 5. OLS Regression results for the association of social behaviours and their interaction with years of education with not moving from East to West Germany (Panel A shows baseline (SB) and Panel B interaction effects.

[Note: Dependent variable = *Did not move from East to West Germany*. Each same-colour set of results is from a separate regression. Estimates of specification (8) in Table 3 are in blue. Red (no controls) and green indicators (with controls) show the estimates of coefficients on social behaviours (Panel A) and social behaviours interacted with age (Panel B) for the interacted models. Estimates for controls are not shown but are available upon request from the authors. Sample size is the same across all specifications; R^2 for models with education interaction effects (red) and with controls (green) are 0.028 and 0.059, respectively. Standard errors are clustered at the household level. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively. Bands of successively weaker colour shades depict 90%, 95% and 99% confidence bands, respectively.]

are no more likely to leave. We also find that less educated individuals who more frequently attend church tend to prefer to stay, but this is not true for more educated church-goers. In addition, women who are more active in sports (but not men) are also more likely to stay.

We observed some interesting results on gender when exploring triple interaction effects, which may signal that social behaviour is a better proxy for the existence of unseen social bonds for women than for men. Compared with the baseline of elderly men, we found that elderly women are less likely to move if they more frequently engage in cultural or entertainment activities as well as in social gatherings or even political activities. The opposite direction of effect is observed for women who are more active in providing a helping hand for their close family and friends, which may indicate that they move in order to help friends and family (e.g., to provide care to grandchildren).[11] Older women who are more politically engaged are less likely to move (relative to older men), which is in line with expectations that loyal citizens would use voice rather than exit – although younger politically active women are more likely to move, possibly indicating that older (but not younger) politically active women in East Germany were more likely to be aligned with the regime, reinforcing their identity and loyalty. Interestingly, this result does not hold for men.

Further research of this type could help policymakers identify avenues through which support for unseen motivations may address the brain drain and depopulation that imperils the sustainability and dignity of regional locations and other areas of lower financial opportunity around the world. In addition, it would be interesting to understand whether the East-West German migration we analyse would have occurred had the wall never existed[12]. Overall, the empirical analysis of data

[11] From the data, we do not know if they have family or friends in the West.

[12] There is also an opinion that discrimination against East Germans moving

Figure 6. OLS Regression results for the association of social behaviours and their interaction with married status with not moving from East to West Germany (Panel A shows baseline (SB) and Panel B interaction effects).

[Note: Dependent variable = *Did not move from East to West Germany*. Each same-colour set of results is from a separate regression. Estimates of specification (8) in Table 3 are in blue. Red (no controls) and green indicators (with controls) show the estimates of coefficients on social behaviours (Panel A) and social behaviours interacted with age (Panel B) for the interacted models. Estimates for controls are not shown but are available upon request from the authors. Sample size is the same across all specifications; R^2 for models with marital status interaction effects (red) and with controls (green) are 0.050 and 0.063, respectively. Standard errors are clustered at the household level. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively. Bands of successively weaker colour shades depict 90%, 95% and 99% confidence bands, respectively.]

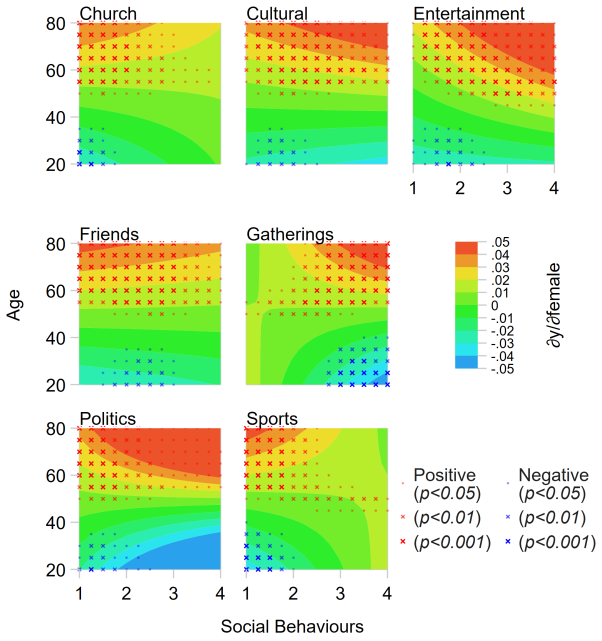

Figure 7. OLS Regression results for the association of social behaviours and their interaction with age and gender with not moving from East to West Germany.

[Note: The figure visualises the marginal effects of female (in contrast to male) across age (y-axis) and levels of participation in the indicated social behaviour on the dependent variable: Did not move from East to West Germany. The x-axis scale on social behaviours ranges from 1 to 4 (4=every week, 3=every month, 2=less frequently, 1=never). Results are drawn from an OLS regression with standard errors clustered at the household level (n=6,616, clusters= 1,995, R^2=0.069). Other individual demographic and socio-economic variables are included as controls. *Church:* Attend Church or Other Religious Events; *Cultural:* Attend Cultural Events; *Entertainment:* Attend Cinema, Pop, Jazz Concerts; *Friends:* Helping Relatives, Friends; *Gatherings:* Attend Social Gatherings; *Politics:* Participate in Local Politics; *Sports:* Participate in Sports.]

taken from this natural experiment setting provides suggestive evidence that non-monetary bonds can be proxied by reasonably standard measures of time use, reflecting individuals' loyalties or social identification, and are associated with the decision to stay in the home community.

Acknowledgments

We are grateful to the guest editor Gigi Foster and two anonymous reviewers for their valuable feedback and suggestions.

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Appendix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Attend cultural events	-.0807							.1025^{+}
	(0.05)							(0.06)
	-.0036							*.004*
Attend cinema, pop, jazz concerts		-.4546***						-.4729***
		(0.04)						(0.05)
		-.0183						*-.0186*
Participate in sports			-.113***					.0225
			(0.03)					(0.04)
			-.0048					*8.8e-04*
Attend social gatherings				-.2299***				-.0753
				(0.05)				(0.06)
				-.01				*-.003*
Helping relatives, friends					-.0832*			.0194
					(0.04)			(0.05)
					-.0037			*7.6e-04*
Participate in local politics						.0225		.0197
						(0.06)		(0.07)
						9.9e-04		*7.8e-04*
Attend church or other religious events							.035	.0182
							(0.05)	(0.06)
							.0015	*7.2e-04*
Constant	2.235***	3.153***	2.306***	2.796***	2.308***	2.071***	2.053***	3.115***
	(0.10)	(0.11)	(0.07)	(0.17)	(0.11)	(0.08)	(0.08)	(0.23)
N	6805	6800	6729	6823	6846	6740	6770	6616
Clusters	2005	2006	1999	2006	2006	2002	2004	1995
Prob. $> \chi^2$	0.138	0.000	0.000	0.000	0.043	0.713	0.495	0.000
Pseudo R^2	0.002	0.110	0.010	0.021	0.003	0.000	0.000	0.120

Note: Dependent variable = *Did not move from East to West Germany*. Standard errors (clustered at the household level) in parentheses. Marginal effects in italics. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

Table 4. Probit regression results for the effect of social behaviours on not moving from East to West Germany

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Attend cultural events	-.0226							.1736*
	(0.06)							(0.07)
	-.0017							*.0118*
Attend cinema, pop, jazz concerts		-.4818***						-.503***
		(0.05)						(0.06)
		-.0336						*-.0341*
Participate in sports			-.1277***					-.0167
			(0.04)					(0.04)
			-.0096					*-.0011*
Attend social gatherings				-.2239***				-.1083
				(0.06)				(0.07)
				-.017				*-.0073*
Helping relatives, friends					-.02			.101+
					(0.04)			(0.06)
					-.0015			*.0068*
Participate in local politics						.105		.083
						(0.07)		(0.07)
						.0081		*.0056*
Attend church or other religious events							.0481	.0083
							(0.06)	(0.06)
							.0037	*5.6e-04*
Constant	1.852***	2.951***	2.045***	2.497***	1.867***	1.682***	1.751***	2.678***
	(0.12)	(0.13)	(0.08)	(0.18)	(0.12)	(0.09)	(0.09)	(0.25)
N	3513	3511	3451	3521	3536	3467	3484	3387
Clusters	1873	1873	1858	1876	1882	1862	1870	1842
Prob. $> \chi^2$	0.711	0.000	0.000	0.000	0.642	0.120	0.399	0.000
Pseudo R^2	0.000	0.111	0.012	0.020	0.000	0.002	0.001	0.132

Note: Dependent variable = *Did not move from East to West Germany*. Standard errors (clustered at the household level) in parentheses. Marginal effects in italics. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

Table 5. Probit regression results with year 1992 sample

	(1) Attend cultural events	(2) Attend cinema, pop jazz concerts	(3) Participate in sports	(4) Attends social gatherings	(5) Helpings relatives, friends	(6) Participate in local politics	(7) Attends church or others religious events
Never	(Ref.)	(Ref.)	(Ref.)	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Less frequently	-.0044	-.0083***	-.0136*	-.003	-.0107**	-.0016	-.0033
	(.0036)	(.0023)	(.0053)	(.0065)	(.0041)	(.0061)	(.0048)
Every month	-.0038	-.0488***	-.0088	-.0053	-.014**	-6.2e-04	.0073
	(.0063)	(.0084)	(.0098)	(.0065)	(.0048)	(.0084)	(.0064)
Every week	-.0222	-.0735***	-.0158*	-.0253***	-.014*	.0097	.0061
	(.0216)	(.0121)	(.0062)	(.0076)	(.0058)	(.0085)	(.0071)
Constant	.9847***	.9969***	.987***	.9915***	.9932***	.982***	.9821***
	(.0025)	(.0012)	(.0018)	(.006)	(.0034)	(.0019)	(.002)
N	6805	6800	6729	6823	6846	6740	6770
Clusters	2005	2006	1999	2006	2006	2002	2004
Prob. >F	0.481	0.000	0.007	0.000	0.015	0.697	0.438
R^2	0.001	0.027	0.003	0.005	0.001	0.000	0.000

Note: Dependent variable = *Did not move from East to West Germany*. Standard errors (clustered at the household level) in parentheses. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

Table 6. OLS regression results for the effect of social behaviours on not moving from East to West Germany, with social behaviours ordinally coded

	(1) Attend cultural events	(2) Attend cinema, pop jazz concerts	(3) Participate in sports	(4) Attends social gatherings	(5) Helpings relatives, friends	(6) Participate in local politics	(7) Attends church or others religious events
Never	(Ref.)	(Ref.)	(Ref.)	(Ref.)	(Ref.)	(Ref.)	(Ref.)
Less frequently	-.1021	-.4594***	-.2934**	-.1115	-.3604+	-.035	-.0688
	(.08)	(.14)	(.10)	(.27)	(.19)	(.13)	(.10)
	-.0044	*-.0083*	*-.0136*	*-.003*	*-.0107*	*-.0016*	*-.0033*
Every month	-.0894	-1.111***	-.2093	-.1838	-.4313*	-.0138	.2062
	(.14)	(.15)	(.19)	(.27)	(.19)	(.19)	(.22)
	-.0038	*-.0488*	*-.0088*	*-.0053*	*-.014*	*-6.2e-04*	*.0073*
Every week	-.381	-1.309***	-.3284**	-.559*	-.431*	.2994	.1637
	(.27)	(.15)	(.10)	(.27)	(.20)	(.37)	(.23)
	-.0222	*-.0735*	*-.0158*	*-.0253*	*-.014*	*.0097*	*.0061*
Constant	2.161***	2.738***	2.227***	2.386***	2.469***	2.098***	2.1***
	(0.06)	(0.12)	(0.05)	(0.26)	(0.18)	(0.04)	(0.05)
N	6805	6800	6729	6823	6846	6740	6770
Clusters	2005	2006	1999	2006	2006	2002	2004
Prob. $> \chi^2$	0.391	0.000	0.002	0.000	0.139	0.860	0.557
Pseudo R^2	0.003	0.115	0.014	0.024	0.005	0.001	0.002

Note: Dependent variable = *Did not move from East to West Germany*. Standard errors (clustered at the household level) in parentheses. Marginal effects in italics. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

Table 7. Probit regression results for the effect of social behaviours on not moving from East to West Germany, with social behaviours ordinally coded.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Attend cultural events	-.001							.0072*
	(0.0024)							(0.0029)
Attend cinema, pop, jazz concerts		-.0224***						-.0251***
		(0.0031)						(0.0037)
Participate in sports			-.0031+					.0027
			(0.0018)					(0.0019)
Attend social gatherings				-.0085***				-.004+
				(0.0022)				(0.0023)
Helping relatives, friends					-.0015			.0024
					(0.0017)			(0.0019)
Participate in local politics						.0035+		.0051**
						(0.0018)		(.0019)
Attend church or other religious events							.0024	9.0e-05
							(0.0018)	(0.0018)
Constant	.9859***	1.026***	.9891***	1.009***	.9879***	.98***	.981***	1.014***
	(0.0044)	(0.00OLS)	(0.003)	(0.0058)	(0.0044)	(0.003)	(0.0033)	(0.0069)
N	6480	6480	6480	6480	6480	6480	6480	6480
Clusters	1955	1955	1955	1955	1955	1955	1955	1955
Prob. > F	0.680	0.000	0.085	0.000	0.392	0.059	0.196	0.000
R^2	0.000	0.021	0.001	0.003	0.000	0.000	0.000	0.025

Note: Dependent variable = *Did not move from East to West Germany*. We excluded those who had received additional education between survey waves based on the self-reported number of years of education from the sample (N=217). Standard errors (clustered at the household level) in parentheses. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

Table 8. Regression results for the effect of social behaviours on not moving from East to West Germany, excluding students from sample

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Attend cultural events	-.0018							.0085*
	(0.0027)							(0.0033)
Attend cinema, pop, jazz concerts		-.0255***						-.0289***
		(0.0035)						(0.0042)
Participate in sports			-.0038+					.0028
			(0.002)					(0.0023)
Attend social gatherings				-.0094***				-.0046+
				(0.0024)				(0.0026)
Helping relatives, friends					-.0018			.0033
					(0.0019)			(0.0021)
Participate in local politics						.0035		.0051*
						(0.0022)		(0023)
Attend church or other religious events							.0023	-6.6e-04
							(0.0021)	(0.0021)
Constant	.9853***	1.029***	.9888***	1.009***	.9868***	.9783***	.9794***	1.017***
	(0.0048)	(0.0052)	(0.0033)	(.0064)	(0.0048)	(0.0035)	(0.0037)	(0.0079)
N	5756	5751	5688	5773	5794	5703	5726	5593
Clusters	1762	1763	1756	1763	1763	1759	1761	1752
Prob. > F	0.510	0.000	0.065	0.000	0.343	0.111	0.277	0.000
R^2	0.000	0.025	0.001	0.003	0.000	0.000	0.000	0.030

Note: Dependent variable = *Did not move from East to West Germany*. We excluded from the sample households with a member who had received additional education between survey waves based on the self-reported number of years of education (246 households). Standard errors (clustered at the household level) in parentheses. The symbols +, *, **, *** represent statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively.

Table 9. Regression results for the effect of social behaviours on not moving from East to West Germany, excluding households with students from the sample