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# Conspicuous Consumption and Communism: Evidence from East and West Germany

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## Abstract

This paper investigates the influence of the political regime on the relative importance of conspicuous consumption. We use the separation of Germany into the communist GDR and the democratic FRG and its reunification in 1990 as a natural experiment. Relying on household data that are representative for Germany, our empirical results strongly indicate that conspicuous consumption is relatively more important in East Germany. Importantly, a significant gap in conspicuous consumption expenditures remains even 18 years after the reunification.

*Keywords:* conspicuous consumption, status-seeking, relative income, political regime, behavioral economics

*JEL:* D12, D62, P36

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# 1 Introduction

Much of economics is about designing institutions in order to induce socially desirable choices for given preferences of decentralized agents. However, institutions may also affect preferences. Such an influence is discussed by Cooter (1998), Fehr and Hoff (2011), and Hwang and Bowles (2011), among others. After more than four decades of separation, the reunification of the communist German Democratic Republic (GDR) and the democratic Federal Republic of Germany (FRG) in 1990 constitutes a unique situation which allows us to explore, in a natural setting, the potential influence of political institutions on preferences.<sup>1</sup> The German population lived under similar circumstances and had been relatively homogenous before the two markedly different political regimes were imposed (see, e.g., Alesina and Fuchs-Schündeln 2007). Nowadays, the population in East and West Germany face the same institutions again. As a result, the identifying assumption that observable differences in attitudes and/or behavior are driven by the experience with different political regimes seems justified.<sup>2</sup> For our paper, we make use of information resulting from this *natural experiment*. Taking the relative importance of conspicuous consumption expenditures as a case in point, our data indicate that the political regime of a country influences individual preferences.

There is already some evidence that hints at possible differences between East and West Germans, however, mostly relying on surveys. We study potential differences in preferences as revealed by real economic behavior. In contrast, Torgler (2003), for example, relies on World Value Survey data when reporting that East Germans' tax morale was higher in the beginning of the nineties and later converged to that of West Germans. Rainer and Siedler (2009) study the extent to which East and West Germans trust institutions and other people. They find that East Germans persistently show less trust than West Germans. Another contribution relying on survey data is that of Alesina and Fuchs-Schündeln (2007). They show that these different political regimes significantly influenced the preferences for

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<sup>1</sup>Within this paper, we refer to the political environment of the GDR by using the term "communism".

<sup>2</sup>In order to be able to draw valid causal inferences related to the treatment variation, it is important to treat only a share of a relatively homogenous population.

redistribution and state intervention, with East Germans being more in favor of the two than West Germans. Their data analysis leads to the conclusion that the preferences of the two populations converge, but that one to two generations must pass for full convergence to take place. Corneo (2001) and Corneo and Grüner (2002) also establish that East Germans are relatively more supportive than West Germans regarding redistribution.<sup>3</sup> Interestingly, there also exists evidence that East Germans redistribute less without being mandated by the state. Building on the experimental findings of Ockenfels and Weimann (1999), Brosig et al. (2011) study experimental data from the solidarity game, focusing on the influence of the political regime on fairness preferences, and attest that East Germans continue to show much less solidarity than West Germans even 20 years after the reunification. Somewhat closer in focus to the present paper given its interest in interdependent preferences, Ferreri-Carbonell (2005) asserts in her empirical analysis of the importance of *comparison income* for individual happiness that East and West Germans are different in that the impact of relative income on subjective well-being is asymmetric for the latter but symmetric for the former (where an asymmetric effect means that poorer individuals' well-being is negatively affected by having income below the reference income, while richer individuals are not better off from having a higher income than the average).

The present paper explores whether the political regime influences preferences by taking the consumption pattern of households in East and West Germany as the object of study. In particular, we are interested in the relative importance of so-called conspicuous consumption. Conspicuous consumption is a concept that can be ascribed to Veblen (1899) and refers to consumption that aims to reveal one's economic status to others. The category of conspicuous consumption addresses the observation that people compare themselves to others in a multitude of ways, with relative performance being important for subjective well-being.<sup>4</sup>

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<sup>3</sup>Corneo and Grüner (2002) actually argue that the taste for redistribution in East Germany is stronger than in Bulgaria, Czechoslovakia, Hungary, Poland, and Russia.

<sup>4</sup>For instance, Dohmen et al. (2011) provide evidence for the importance of relative income for subjective well-being using functional magnetic resonance imaging (fMRI). Further empirical evidence for the importance of relative income positions for individual happiness and actions can be found in Stutzer (2004) and Frey et al. (2008), for instance.

In the attempt to establish one's economic status relative to others, consumption is often used as a signal. This finding is derived theoretically by Corneo and Jeanne (1998) and supported empirically by Heffetz (2011), among others. This is due to the fact that many consumption choices (such as which car to drive) are easily observable by others, whereas aspects such as financial wealth are not readily observed. Goods that are particularly suited for conspicuous consumption given their impact on social rank are commonly referred to as *positional goods*.<sup>5</sup> Both the fact that relative concerns are important and that goods differ with regard to their positionality (i.e. that certain goods have a higher relevance for relative standing in society) have been confirmed in several empirical studies, among them Alpizar et al. (2005), Carlsson et al. (2007), Carlsson and Qin (2010), Caporale et al. (2009), Clark et al. (2008), Clark and Senik (2010), Johansson-Stenman et al. (2002), Solnick and Hemenway (1998, 2005), and Solnick et al. (2007). Our analysis complements these studies by dissecting non-experimental consumption patterns from East and West Germany.

Our paper considers whether or not the different political regimes experienced by East and West Germans have influenced their preferences with regard to conspicuous consumption. This is of particular interest for several reasons: First, in contrast to the experience of West Germans, the communist regime severely limited people's abilities to consume conspicuously as the choice sets were relatively restricted (see, e.g., Fulbrook 2009). Moreover, consumption of conspicuous goods was often seen as an indicator for individual collaboration with the state security service (*Staatssicherheit*) in East Germany because access to such goods was usually restricted to the privileged (see, e.g., Fulbrook 2009), thereby creating the potential for social isolation and stigmatization. In addition, the emphasis on equality in East Germany meant that there were substantially smaller differences in individual economic achievements when compared to West Germany. For instance, in 1988, the average net in-

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<sup>5</sup>The expression "positional good" was first introduced by Hirsch (1976) and taken up afterwards by others including Frank (1985a, 1985b, 2008), and Solnick and Hemenway (1998, 2005). Cars are usually considered as a prime example of a positional good. Along these lines, Winkelmann (2012) establishes for Switzerland that the prevalence of luxury cars in one's own municipality decreases income satisfaction, and Kuhn et al. (2010) find that neighbors of people who won a car in the lottery have significantly higher levels of car consumption than others.

come of individuals with a university degree was 15% higher than that of blue-collar workers in the German Democratic Republic, while in West Germany this difference amounted to 70% (Schäfer 1998). Fuchs-Schündeln et al. (2010) argue that incomes continued to be more evenly distributed in East than in West Germany shortly after the reunification. A lower inequality of incomes makes it more difficult for middle-class households to consume in a way that distinguishes them from working-class households. Furthermore, lower inequality also suggests that there was less reason to resort to conspicuous consumption since the unobserved heterogeneity in wealth was less pronounced in the GDR. In addition, it must be noted that the ideology of the GDR, which saw itself as a workers' and peasants' state, comprised an idealization of the working class, a further contrast to West Germany with probable repercussions for the relative importance of conspicuous consumption (see, e.g., Fulbrook 2009).

If the political regime had no effect on individual preferences, we would not observe any systematic differences between East and West Germany after reunification when controlling for households' income, socio-economic household characteristics, education, the distribution of income in the state (*Bundesland*) of residence, and the unemployment rate. If the regime had an effect, in principle two possible directions are conceivable. One is that people in East Germany emphasize relative consumption more than individuals in West Germany do, possibly to make up for restricted possibilities of doing so before reunification. Another reason to expect a greater importance of conspicuous consumption for East Germans after the reunification is that East Germans seem to attribute economic outcomes less to luck than people from West Germany do (see Alesina and Fuchs-Schündeln 2007). This perception of the determinants of economic success also corresponds with the finding that more East Germans believe in the importance of hard work (Corneo 2001). When differences in economic outcomes are perceived to be driven by differences in ability and/or effort, this supposedly gives more reason to signal economic success to others. The opposite hypothesis is that people might have internalized the emphasis on egalitarianism of the political regime in the

GDR (at least to an extent) and, accordingly, are less inclined to distinguish themselves from their peers by consuming conspicuously.

This paper uses a data set that is representative for Germany and comprises household characteristics, a detailed breakdown of household expenditures, and information about household income. Our empirical results indicate that there are indeed significant differences between consumption patterns in East and West Germany, and that these differences are in support of the hypothesis that conspicuous consumption is relatively *more* important in East Germany. Importantly, the significant differences regarding conspicuous consumption in East and West Germany persist over time – even 20 years after the fall of the Berlin Wall: Our use of 2008 data paints a picture not much different from that emergent from the 1993 data shortly after the reunification.

When testing for the relative importance of conspicuous consumption in East and West Germany, we seek to control for other socio-economic determinants of conspicuous consumption and thereby also consider the influence of unemployment, urbanity, education, and gender, yielding a host of findings secondary to our result on the effect of the political regime on preferences. We thereby contribute to the evolving literature on gender effects (see, e.g., Andreoni and Vesterlund 2001, Croson and Gneezy 2007). Our regression results suggest that women spend more on visible goods than men. The findings on the effect of gender on the strength of positional concerns hitherto stem from surveys and are ambiguous. Alpizar et al. (2005) survey Costa Rican students and their results also point towards women caring more about relative income and consumption than men. A similar finding is obtained by Corazzini et al. (2012). However, Pingle and Mitchell (2002) argue that gender did not influence the probability that a participant will show a positional concern for income based on their results from a survey. Similarly, Dohmen et al. (2011) report that the importance of relative standing is comparable for both sexes. With regard to education, we obtain a complex picture implying that individuals without completed schooling spend significantly less on conspicuous consumption, and that receiving a degree at university lowers the some-



what higher expenditures of the well-educated individuals. Our finding that individuals with more education tend to put more weight on relative comparisons is in agreement with, for instance, the result of Clark and Senik (2010) regarding the importance of relative income. The urbanity of the household's residence is a further control variable. This variable shows us that conspicuous consumption is more important in urban areas than in rural ones, which is in line with the early intuition of Veblen (1899) about the role of social cohesion.

Our paper is most closely related to Charles et al. (2009) who analyze differences in spending on conspicuous consumption between races (i.e., Blacks, Hispanics, and Whites) using US data from the Consumer Expenditure Survey from 1986 to 2002. The authors find that spending patterns are significantly different between races. When accounting for differences in income, Blacks and Hispanics spend about 25% more on visible goods than Whites. Charles et al. (2009) then go on and additionally include a control for mean race/state reference group income and establish that this explains most of the racial gap in visible spending, a finding that is compatible with the interpretation that consumption is used as a signal for unobservable income. Similarly, our study includes a proxy for the mean income of the reference group, which is constituted by the population of the state (*Bundesland*).<sup>6</sup> Although our measure is relatively coarse since the identification of the reference group does not condition on a second household attribute, we find that it still has explanatory power with regard to the level of expenditures on visible goods. Kaus (2010) reproduces the analysis by Charles et al. (2009) using data from South Africa. By and large, his findings are consistent with the earlier study, although the effect of the mean income of the reference group is more intricate.

This paper contributes to the literature in several ways. First, the present paper shows the influence of the political regime in a country on preferences relying on real economic decisions, instead of making use of survey or experimental data. Second, we provide a

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<sup>6</sup>Similarly, Persky and Tam (1990) assume that all individuals living in the same region are part of the reference group, while, for instance, Easterlin (1995) implicitly assumes that individuals compare themselves with all others in the country.

detailed analysis of the relative importance of conspicuous consumption for East and West Germany, adding to the findings for different races in the US and South Africa. Third, the data analysis yields findings regarding the influence of gender on the relative importance of conspicuous consumption expenditures, an issue that has not yet been addressed in the literature. The remainder of our paper is organized as follows. In Section 2, we describe the data used for our analysis. In Section 3, we present our empirical analysis. The last section concludes.

## 2 Data

The present study relies on the income and expenditure sample (*Einkommens- und Verbrauchsstichprobe (EVS)*) of the German statistical office (*Statistisches Bundesamt*), which is the largest sample of its kind in the European Union. This quinquennial cross-section data set is representative for Germany. The German government relies on the EVS for several purposes such as its report on poverty. Other uses of the data set include the calculation of the minimum level of welfare transfers and adjustments in the weighting scheme for the computation of the consumer price index. Households voluntarily participate in the survey, provide information on socio-demographic household characteristics, and supply data on household income and expenditures, savings, durable consumer goods, and the housing situation. The scope of the EVS is thus similar to that of the US Consumer Expenditure Survey. The EVS has been used in other research regarding topics such as household savings behavior and inequality (see, e.g., Börsch-Supan et al. 2001, Fuchs-Schündeln et al. 2010, Kopetsch and Rauscher 2006, Scheicher 2010). For further information on the EVS, see, e.g., Statistisches Bundesamt (2005a, 2005b).

Our central interest is with consumption patterns in East and West Germany and their possible differences regarding conspicuous consumption. As a consequence, the understanding of conspicuous consumption is pivotal to the present study. Conspicuous consumption is understood as the use of money or other resources to display a higher social status than

others (Veblen 1899). Goods that are particularly suited to support this objective should be (i) readily observable, (ii) leave the impression that those who consume more of them are, on average, better off than individuals who consume less of them, and (iii) portable across a variety of interactions. On the basis of an online survey and common sense, Charles et al. (2009) consider visible consumption to be expenditures on apparel (including, for example, jewelry), personal care, and vehicles. We use a somewhat wider definition of consumption expenditures that can be considered conspicuous (see Table 1). This wider definition is utilized to incorporate the evidence that the respect and admiration one gets from interaction with face-to-face groups such as colleagues and friends are a major determinant of status concerns (see Anderson et al. forthcoming, Clark and Senik 2010, Senik 2009). Accordingly, our definition of “visible goods” also comprises items that can be positional only vis-a-vis colleagues, friends, and family. With this wide definition, we address that items such as expensive TVs, golf clubs, furniture, and pianos are chosen presumably also with regard to how they will be perceived by others. Furthermore, we have more items that principally belong to the category *personal care* used by Charles et al. (2009), such as dental treatments. Finally, it seems rather natural to assume that water and air vehicles are to a considerable extent valued for their impact on social rank. Importantly, we will make use of the definition by Charles et al. (2009) as a robustness check of our baseline analysis. As can be seen in Column (3) of Table 1, Charles et al. include only a small number of items in their definition. To further check for the robustness of our results, we will additionally use a basket of observable consumption goods that lies between our baseline definition and the one used by Charles et al. (Column 2). Conspicuous consumption does not comprise items with zero or small visibility and/or low status effect such as insurance premia, books, food, utilities, tobacco, education and training, and pharmaceutical products. Similarly, we follow Charles et al. (2009) in excluding rents, albeit for a different reason. Whereas Charles et al. (2009) are concerned about racial discrimination in the housing market, we opt for this course of action because rents are not only systematically but also markedly lower in East

Germany than in the West. According to the German micro-census, average rents in East Germany amounted to only 75.9% of average rents in West Germany in 2010, for example (see Statistisches Bundesamt 2012). Besides, there is an additional reason to exclude rents from our analysis: The ratio of households owning a house or a flat is significantly larger in West Germany, which can mainly be attributed to expropriations of East German households after the Second World War.

INSERT TABLE 1 HERE

We are interested in identifying the effect of having experienced the communist regime in the GDR on preferences as revealed by consumption expenditures, by focusing on the relative importance of conspicuous consumption. This influence can presumably be identified best by using the sample collected shortly after reunification, which in this case is the EVS 1993. However, in addition to studying the difference between East and West Germans shortly after the abolition of the communist regime, it is interesting to see whether the discrepancy persists when both populations are subject to the same institutions over a considerable period of time. In this case, differences can be more clearly attributed to the influence of the regime because the effects that are relevant shortly after reunification, such as higher purchases to catch up with regard to durable goods, are no longer of importance. In order to check for possible persistence, we also include EVS 2008 into our analysis. At this point, we present the descriptive statistics for the variables of interest, distinguishing between the 1993 and the 2008 sample.

EVS 1993 contains information on 40,230 households (see Table 2). The share of households residing in East Germany is 21%.<sup>7</sup> The majority of heads of households are males in East and West Germany. However, there is a marked difference in the proportion of households with a female head in East compared to West Germany. The average number

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<sup>7</sup>The data set allows to distinguish between the two parts of Berlin.

of adults per household is slightly higher in the former GDR, while the number of children in the household is lower here than in West Germany. About 36% of respondents live in urban areas, i.e. in a city with more than 100,000 inhabitants.<sup>8</sup> The table also indicates that mean spending on visible goods is higher in West Germany, irrespective of the definition applied. All monetary figures reported here and below are converted to euros and deflated to the year 1993.<sup>9</sup> In correspondence with Table 1, the mean of the expenditures for visible goods when using the definition of Charles et al. (2009) is lower than it is for our baseline definition. Below, we will present also estimations in which we condition the expenditures on conspicuous consumption on moments of the income distribution in the state of interest. This explains the inclusion of  $\log(\text{mean income}_j)$  and  $\log(\text{stddev. income}_j)$  in Table 2, both of which are created using the detailed EVS data. The participant households are composed overwhelmingly of German citizens. The number of heads of household without completed schooling at any level is very small, whereas the average share of households with schooling that allows progressing to university (*Abitur* or equivalent) is 25-30%. Finally, the average unemployment rate in East Germany is almost twice as high as the one in West Germany, where we make use of unemployment rates at the state level for the quarter of the year in which the household participated in the survey.

INSERT TABLE 2 HERE

Our data set does not allow us to control for migration between East and West Germany because only current residence is reported. Turning to gross flows, migration from East to West Germany occurred in two waves, being high right after reunification (with 230,000 people migrating in 1991) and with a second wave starting in the late 1990s. Migration from the West to the East remained rather stable (at less than 100,000) throughout the time

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<sup>8</sup>This definition follows the German definition of a city (“Großstadt”) and allows us to optimally exploit the information on households’ residences provided in the EVS.

<sup>9</sup>We construct the deflators using the consumer price indices provided by the German Federal Statistical Office (Destatis).

period (Fuchs-Schündeln and Schündeln 2009). As a result, the findings for the 1993 data are most likely not affected by migration. Regarding our analysis of the 2008 data, it may be that some households are categorized as East German households because they resided in East Germany at the time of the survey but had not experienced the communist regime, and *vice versa*. However, such miscategorization of households is likely to be negligible because a large share of the migration to East Germany is caused by returning East Germans and there is presumably some adaptation towards the local norm as in Brosig et al. (2011).<sup>1011</sup> Additionally, migration tends to weaken the difference between East and West Germany. Hence, any results pointing to statistically significant differences between conspicuous consumption expenditures in East and West Germany can be seen as a conservative estimate of the effects of communism on preferences.

EVS 2008 contains information on 44,060 households (see Table 3).<sup>12</sup> The share of households residing in East Germany is 24 %. The mean age of the head of the household is somewhat higher than it was in 1993. The likelihood of having a female as the head of the household is also higher than in 1993 in both East and West Germany. This also corresponds with a higher number of households with only one adult. Together with the lower number of children, this helps to explain why Table 3 reports lower mean income and lower mean visible expenditures. Again, the mean spending on visible goods is higher in West Germany, although the gap is less pronounced than it was in 1993. The share of respondents living in urban areas is smaller than in the 1993 sample. This change is particularly strong for East German respondents. Interestingly, the somewhat lower level of total expenditures can be partly attributed to this change in the urbanity of households in the sample because we obtain a positive coefficient when explaining total expenditures as a function of the dummy variable “City”. The average unemployment rates in 2008 are lower than in 1993, without a

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<sup>10</sup>Since 1991, about 750,000 East German migrants who had previously moved to West Germany returned to East Germany (see Lang and Nadler 2012).

<sup>11</sup>As explained in Section 3, estimations using a subsample with individuals not older than 18 years at the time of Germany’s reunification yields results very similar to estimations based on the full sample, suggesting that norms are transmitted from one generation to the next.

<sup>12</sup>We exclude 28 households who reported negative income.

bearing on the relation between the average rate for the West and the East.

INSERT TABLE 3 HERE

### 3 Empirical analysis

The separation of Germany into the communist GDR and the democratic FRG after World War II and its reunification in 1990 constitutes a unique natural experiment, allowing us to analyze the influence of the political regime on preferences. Our main research question is whether or not the importance of conspicuous consumption is significantly different between East and West Germany, thereby indicating an influence of the political regime on preferences as revealed by households' expenditures. There are good reasons for hypothesizing that the importance may differ when institutions have an influence on preferences. For example, the set of alternatives for any given product category was rather small in the GDR, in some cases comprising only one element. As a result, possibilities to signal status by selecting the upscale product variety were restricted in East Germany. In addition, the unobserved heterogeneity in economic successes was significantly smaller here, given the system's emphasis on egalitarianism within and across professions. One very interesting possibility is that the values about equality promoted by the political regime in the GDR were actually internalized by the people. Therefore, the socialist experience may indeed have generated strong inequality aversion. The result that policy makers may steer the evolution of preferences by reliance on the adequate institutions would be important in a wide range of fields such as public economics and welfare economics.

Given our research question, households' spending for visible consumption is the variable of central interest in our econometric analysis. The dependent variable  $\log(\textit{visible spending}_i)$  captures household  $i$ 's expenditures for goods that are classified as being easily observable by others and status-relevant. As pointed out in Section 2, we rely on one baseline definition

of what constitutes expenditures for “visible goods” and later check the robustness of our findings by resorting to our intermediate definition and the narrower one of Charles et al. (2009). Our set of control variables includes information on households’ characteristics that might have an effect on expenditures on visible goods. First, we control for a household’s income ( $\log(income_i)$ ), which is most likely to be a key predictor for consumption expenditures. Similar to previous research (e.g., Charles et al. 2009), both expenditures on visible consumption and income enter the empirical model in log-form in order to allow us to interpret the respective coefficients as elasticities. Second, we use a vector of characteristics including household  $i$ ’s number of both adults ( $\# \text{ of adults}_i$ ) and children ( $\# \text{ of children}_i$ ), and the age ( $Age_i$ ) and gender ( $Female_i$ ) of the household’s head to control for the socio-demographic structure of the household. Third, as argued in Section 1, signaling one’s wealth via conspicuous consumption tends to be more important when social cohesion is low as it is otherwise futile to resort to this costly instrument of information transmission. For our analysis, this entails that spending on visible goods may be more important in large cities than in small towns since the latter tend to be characterized by less anonymity. To address this issue, we include a dummy variable  $City_i$  taking the value of 1 whenever the number of inhabitants of household  $i$ ’s city of residence exceeds 100,000. Additionally, it may be expected that the households’ education influences conspicuous consumption spending. Our data provides rich information on educational levels including the highest school leaving certificate and whether the household’s members attended university. Based on this information, we create three different dummy variables. First, the dummy variable  $no \text{ school certificate}_i$  takes the value of 1 whenever the head of the household claims not to have finished school. Second, the variable  $Abitur_i$  equals 1 if the head of the household has successfully finished high school. Third, we include the dummy variable  $University \text{ degree}_i$  which equals 1 whenever the head of the household holds a university degree and is 0 otherwise. As a further household-specific control variable, we include the dummy  $German_i$ , taking the value of 1 whenever the head of the household is a German citizen. In order to reflect a notion of wealth, we resort to



the level of savings ( $\log(savings_i)$ ) in order to get a better hold of actual permanent income. Finally, we include proxies for the income distribution of the reference group by using  $\log(mean\ income_j)$  and  $\log(stddev.\ income_j)$ , where the population of the state is employed as a reference group (as in, e.g., Persky and Tam 1990).

To address our research question, we pool the data for 1993 and 2008 and perform a number of OLS regressions with heteroskedasticity-consistent Huber-White standard errors. The dependent variable is the log of household  $i$ 's expenditures on visible goods. We start by considering income as the only explanatory variable. Column (1) of Table 4 clearly indicates that conspicuous consumption is higher for higher levels of income. The coefficient for the income control is close to 1, indicating that our visible consumption measure indeed reacts strongly to changes in income (as would have been expected for conspicuous consumption). Next, we turn to the issue at stake, i.e., the question of whether or not there is a significant difference in the relative importance of conspicuous consumption for East and West Germany, and include a dummy variable  $East\ Germany_i$  that takes the value of 1 whenever household  $i$ 's location of residence is in the area of the former German Democratic Republic. Our regression results for this model (Column 2) reveal a highly significant positive coefficient of the  $East\ Germany_i$  dummy variable indicating that there in fact is more conspicuous consumption in East Germany when controlling for income.

Having established the pronounced difference between conspicuous consumption in East and West Germany, it is now of interest to test whether this effect persists even though East and West Germans are subject to the same institutions after the reunification. This is addressed by including an interaction term of the  $East\ Germany_i$  dummy variable and a year 2008 dummy variable. The coefficients in Column (3) indicate that the difference between East and West Germany still exists (although not as marked as before) and that the level of conspicuous consumption is lower in 2008.<sup>13</sup> Column (3) reveals that households' spending

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<sup>13</sup>The finding regarding the lower level of conspicuous consumption in 2008 may be partly attributed to the unfolding of the financial crisis, intuitively causing households to cut short on conspicuous consumption. However, conspicuous consumption remains important in times of crisis. For example, Nunes et al. (2011) find that designer handbags released in the midst of the recent recession display the brand more prominently,

on visible items was about 15% higher in East Germany after the reunification. This gap has decreased but not vanished and is still statistically significant: Performing an F-test, we find that the hypothesis that  $East\ Germany_i + East\ Germany_i \times 2008 = 0$  can be rejected ( $p < 0.0001$ ).

Next, we continue to expand the set of controls by inserting the variables introduced at the beginning of this section. We finally reach the following model for household  $i$  living in state  $j$ :

$$\begin{aligned} \log(\text{visible spending}_i) = & \alpha_0 + \alpha_1 \log(\text{income}_i) + \alpha_2 \text{East Germany}_i + \alpha_3 \text{East Germany}_i \times 2008 \\ & + \alpha_4 2008 + \alpha_5 \text{Female}_i + \alpha_6 \text{Age}_i + \alpha_7 \text{Age}_i^2 + \alpha_8 \# \text{ of adults}_i \\ & + \alpha_9 \# \text{ of children}_i + \alpha_{10} \text{City}_i + \alpha_{11} \text{German}_i \\ & + \alpha_{12} \text{No school certificate}_i + \alpha_{13} \text{Abitur}_i \\ & + \alpha_{14} \text{University degree}_i + \alpha_{15} \log(\text{savings}_i) \\ & + \alpha_{16} \log(\text{mean income}_j) + \alpha_{17} \log(\text{stddv. income}_j) + \epsilon_i, \end{aligned}$$

$i = 1, \dots, 84290; j = 1, \dots, 17$ , which is our preferred empirical specification because it includes, besides the East dummy of central interest, a host of potentially relevant control variables at the household level and the moments of the income distribution in the state of residence (as in Charles et al. 2009).

Our inferences regarding the difference between East and West Germany remain the same when incrementally adding the additional control variables. The model presented in Column (5) includes all of our household-specific explanatory variables. In Column (6), we additionally make use of the control variables that account for the distribution of income in state  $j$ . Column (7) presents a first robustness check by the inclusion of the unemployment rate to which we will refer more explicitly below. As can be seen from Columns (4)-(7), the coefficients of both the  $East\ Germany_i$  dummy variable and the  $East\ Germany_i \times 2008$  interaction term are statistically significant at the 1%-level and reveal a similar numerical

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which is seen as a sign that the need to display status persists during economic downturns.

impact. For all these estimations, the hypothesis that  $East\ Germany_i + East\ Germany_i \times 2008 = 0$  can be rejected with p-values equal to 0.002 or even smaller.<sup>14</sup>

INSERT TABLE 4 HERE

Table 4 illustrates that we observe a highly significant and rather robust *Female<sub>i</sub>* coefficient in our estimations (5)-(7).<sup>15</sup> Women spend about 7% more on visible goods than men. This is interesting given that Charles et al. (2009) do not report a gender effect for their data set and that the literature on the importance of relative standing arrives at different conclusions (as explained in Section 1). We also find that expenditures for visible goods decline with the head of the household's age. This corresponds with the findings by Charles et al. (2009). While the effect of more children is specific to the definition of conspicuous consumption (as the sign of the coefficient turns out to be positive below), the number of adults has a positive coefficient in all models. Furthermore, we find that, overall, visible consumption spending tends to be higher in cities than in smaller towns and rural areas. This result is unsurprising when it is argued that city dwellers have more interactions with people that they do not know very well, who thus may be attentive to and impressed by signals sent by consumption choices. At this point, it must be noted that our definition of conspicuous consumption also includes goods that are relevant for friends, colleagues, and family. Thus, the argument just presented for people living in major cities would not necessarily apply to these categories. However, previewing our robustness check presented below, the positive influence of urbanity also results when we use the smaller basket of visible goods proposed by Charles et al. (2009). Given these results, we conclude that conspicuous consumption is more pronounced in larger cities.

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<sup>14</sup>Note that the number of observations in Columns (5) - (7) is slightly smaller because the number of children/adults is not unequivocally clear for all households due to the wording of the respective EVS question capturing household structure.

<sup>15</sup>*Female<sub>i</sub>* is a dummy variable which takes the value of 1 whenever the head of the household is female and 0 otherwise.

With regard to citizenship, our regression results reveal that households with a German head of household spend significantly more on conspicuous items. Our findings regarding the influence of the level of education do not establish a monotonous relationship. If the head of the household did not finish school, conspicuous consumption expenditures are significantly lower. In contrast, households' expenditures on visible items are higher when the head of household has achieved a school certificate enabling university studies. But, when a university degree is actually obtained, this depresses visible spending once again (without being strong enough to offset the positive effect of good schooling). Regarding the influence of savings, we obtain the intuitive finding that households with more savings (which may be understood to be those households with a higher permanent income when holding current income constant) choose to spend more on visible goods. This finding is robust for all of our specifications.

Finally, higher mean income of the reference group (although not always significant) decreases spending on visible goods, which is consistent with the theoretical prediction (explained, for instance, in Charles et al. 2009, and Glazer and Konrad 1996). Holding constant the income of household  $i$ , an increase in mean income of the reference group means that household  $i$  is now more of a low-income household for the group, thus lessening the motive of household  $i$  to impress others by consuming conspicuously. The way in which changes in the variance affect conspicuous consumption is not clear from the theoretical point of view. For our data set, it is shown to increase visible goods consumption.

It must be noted that East and West Germany differ persistently regarding the unemployment rate (see Section 2). Therefore, it is of utmost importance to consider this variable as a control. We find that conspicuous consumption expenditures increase significantly, albeit modestly, with the unemployment rate. This may be understood as implying that individuals are using consumption to differentiate themselves from the unemployed. This will be particularly important in states with especially high unemployment rates. Most importantly, the inclusion of this variable does not lower the explanatory power of the identified

East Germany effect.

One other possible objection to our identification of an East Germany effect may be that East Germans simply have higher overall consumption levels. In order to test whether total household expenditures differ between East and West Germany, we additionally run a regression using the same explanatory variables, but taking household  $i$ 's total expenditures as the dependent variable (results available upon request). Utilizing all explanatory variables available at the household level (as in Column (5)), we find a statistically significant negative coefficient of the *East Germany<sub>i</sub>* dummy variable. The coefficient of the *East Germany<sub>i</sub> × 2008* interaction term turns out to be positive and significant. This pattern also holds true when including the control variables for the moments of the income distribution (as in Column (6)) and the unemployment rate (as in Column (7)). F-tests show that *East Germany<sub>i</sub> + East Germany<sub>i</sub> × 2008 = 0* can be rejected for the first and third estimation at the 5%-level, but not for the second. We therefore conclude that our findings presented above are not driven by effects due to total consumption spending, suggesting the validity of the conspicuous consumption interpretation.

Before concluding, we report the results of our robustness checks. First, we vary the definition of visible goods and apply the intermediate definition described in Table 1. As can be seen from Table 5, the magnitude and significance level of the East Germany effect hardly change. Importantly, our preferred model in Column (6) shows that spending patterns seem to have converged, but that there still is a significant difference between East and West Germany almost twenty years after the reunification. Similarly, the coefficients for *Female<sub>i</sub>* and *City<sub>i</sub>* are significant and have the same sign as above. Second, Table 6 makes use of the definition of visible goods proposed by Charles et al. (2009). Again, we find evidence for the hypothesis that the relative importance of conspicuous consumption is higher in East Germany. Column (6) reveals that the difference between East and West Germany is still statistically significant for our preferred model. However, we find that this difference is no longer significant when including state  $j$ 's unemployment rate as explanatory variable. A

major explanation for this result might be the large correlation between  $East\ Germany_i$  and  $Unemployment\ rate_j$ .<sup>16</sup> Third, we examined the robustness of the gender effect. In order to do so, we excluded all households with children and/or more than one adult from the sample. Based on this sub-sample of 21,238 one-person households, we re-estimated Tables 4, 5, and 6. Our inferences regarding the gender effect do not change. We still find that females spend significantly more on conspicuous consumption than males. Additionally,  $East\ Germany_i + East\ Germany_i \times 2008 = 0$  can be rejected in every single regression, independently of which definition of conspicuous consumption expenditures is applied. Fourth, we performed a number of further robustness checks in addition to those presented above. For example, we considered empirical models with dummies for all states instead of the East dummy variable in order to check whether or not there are other regional disparities possibly more important than the East/West-distinction emphasized in the paper at hand. However, our analyses confirm that there is a dividing line between East and West Germany (justifying the treatment presented above), because the dummy variables' coefficients reveal that there is much more homogeneity with respect to conspicuous consumption among states in West Germany and states in East Germany than we find when comparing states in the East to states in the West and vice versa. In another regard, we restricted our analysis to those households whose heads were 18 years or younger at the time of the German reunification in 1990. We still find a significant East Germany effect for these 16,195 households whose heads have not experienced the communist system during adulthood. Comparing the resulting point estimates of the  $East\ Germany_i$  dummy variable and the  $East\ Germany_i \times 2008$  interaction term with the estimates in Table 4 yields very similar results. Whereas the difference amounts to 7.8% in Table 4, in the restricted sample it is 6.2%. As a result, we conclude that our main results are robust to changes in the basket of visible goods and restrictions regarding the age of the heads of household.

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<sup>16</sup>The correlation between these two variables turns out to be 0.811 and statistically significant at the 1%-level. However, when we estimate a model with all the explanatory variables used in Column (6) separately for the years 1993 and 2008, the coefficient of the  $East\ Germany_i$  dummy variable is significant at the 5%-level (1%-level), with a point estimate of .043 (.124) for the 2008 (1993) sub-sample.

INSERT TABLE 5 HERE

INSERT TABLE 6 HERE

## 4 Conclusion

This paper makes use of the natural experiment created by the separation and reunification of Germany to analyze whether a political regime influences preferences. In particular, we are interested whether or not conspicuous consumption (as a means to signal status to others) is relatively more important in East Germany. Our empirical analysis makes use of a data set that informs in detail about consumption patterns and household income, and is representative for Germany. Many ideological aspects of the communist regime such as the promotion of egalitarian values and the idealization of the working class make the extent to which people seek to signal their status to others once they find themselves in a market economy an interesting topic. We show that there are significant differences in consumption patterns between East and West Germany, where East Germans spend more on visible goods. The inclusion of 2008 data allows us to conclude that the significant difference persists 18 years after the reunification.

The present paper provides evidence that institutions, in this case political regimes, influence preferences. This finding may be partly attributable to social norms (that were shaped by the respective political regimes) being passed on to the next generations. Such path dependence would be an important aspect for policy makers to take into consideration. Our results may also be of great policy importance because conspicuous consumption has been shown to have far-reaching societal consequences.<sup>17</sup> Means to correct possible incentives

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<sup>17</sup>For example, Moav and Neeman (2010, forthcoming) show that conspicuous consumption may influence the likelihood of poverty traps. Similarly, Frank (2000) argues that conspicuous consumption may use up resources otherwise spent for healthcare, for example.

for excessive conspicuous consumption would include region-specific taxation (an instrument already in use in the United States of America, for example).

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| Category                                                                                                        | Baseline | Intermediate | Charles et al. (2009) |
|-----------------------------------------------------------------------------------------------------------------|----------|--------------|-----------------------|
| Motor vehicles (new/used), motorbikes, bikes (including commodities for motor vehicles)                         | X        | X            | X                     |
| Shoes                                                                                                           | X        | X            | X                     |
| Purses, shoulder bags                                                                                           | X        | X            | X                     |
| Apparel (women, men, children, babies)                                                                          | X        | X            | X                     |
| Jewelry, watches                                                                                                | X        | X            | X                     |
| Skin and body care: commodities and services                                                                    | X        | X            | X                     |
| Hosiery goods/headpieces                                                                                        | X        | X            |                       |
| Dental treatments & prostheses                                                                                  | X        | X            |                       |
| Health care consumer goods                                                                                      | X        | X            |                       |
| Furniture                                                                                                       | X        | X            |                       |
| Valuable electronic household appliances (other than washing machine, tumble dryer, fridge, freezer, or heater) | X        | X            |                       |
| Phones, TVs, radio sets, cameras                                                                                | X        | X            |                       |
| Optical instruments, collections, art objects                                                                   | X        |              |                       |
| Water vehicles, aircraft                                                                                        | X        |              |                       |
| Music instruments                                                                                               | X        |              |                       |
| Sporting and other leisure goods (e.g., games, toys)                                                            | X        |              |                       |
| Food and drinks in restaurants                                                                                  | X        |              |                       |
| Package holidays                                                                                                | X        |              |                       |

Table 1: Definitions of visible goods.

| Variable                              | Obs   | Mean     | Std. Dev. | Min      | Max      |
|---------------------------------------|-------|----------|-----------|----------|----------|
| <b>Eastern Germany</b>                | 40230 | .2101914 | .4074495  | 0        | 1        |
| <b>Income</b>                         | 40230 | 50915.22 | 32309.89  | 0        | 513051.6 |
| West                                  | 31774 | 54872.2  | 33930.05  | 0        | 513051.6 |
| East                                  | 8456  | 36046.6  | 18995.15  | 4003.79  | 260558.1 |
| <b>Female</b>                         | 40230 | .2899577 | .4537481  | 0        | 1        |
| West                                  | 31774 | .2552087 | .4359853  | 0        | 1        |
| East                                  | 8456  | .4205298 | .4936733  | 0        | 1        |
| <b>Age</b>                            | 40230 | 48.8435  | 15.08305  | 20       | 85       |
| West                                  | 31774 | 49.21593 | 15.36735  | 20       | 85       |
| East                                  | 8456  | 47.44406 | 13.87493  | 20       | 85       |
| <b>No. of adults</b>                  | 39196 | 1.719002 | .4494923  | 1        | 2        |
| West                                  | 30916 | 1.707918 | .4547271  | 1        | 2        |
| East                                  | 8280  | 1.760386 | .4268734  | 1        | 2        |
| <b>No. of children</b>                | 40230 | .8510564 | 1.081454  | 0        | 5        |
| West                                  | 31774 | .856392  | 1.107334  | 0        | 5        |
| East                                  | 8456  | .8310076 | .9779055  | 0        | 5        |
| <b>City</b>                           | 40230 | .3644792 | .4812898  | 0        | 1        |
| West                                  | 31774 | .35699   | .4791194  | 0        | 1        |
| East                                  | 8456  | .3926206 | .4883624  | 0        | 1        |
| <b>Savings</b>                        | 40230 | 6920.998 | 11591.45  | 0        | 351335   |
| West                                  | 31774 | 7482.631 | 12522.14  | 0        | 351335   |
| East                                  | 8456  | 4810.625 | 6663.575  | 0        | 119514   |
| <b>log(mean income<sub>j</sub>)</b>   | 40230 | 10.82308 | .1790131  | 10.42676 | 10.97085 |
| West                                  | 31774 | 10.91128 | .0555589  | 10.74553 | 10.97085 |
| East                                  | 8456  | 10.49168 | .0424873  | 10.42676 | 10.57174 |
| <b>log(stddv. income<sub>j</sub>)</b> | 40230 | 10.30137 | .24653    | 9.779844 | 10.51313 |
| West                                  | 31774 | 10.42252 | .0798291  | 10.14306 | 10.51313 |
| East                                  | 8456  | 9.846134 | .0530172  | 9.779844 | 9.905469 |
| <b>Vis. sp.</b>                       | 40230 | 8585.128 | 8088.224  | 0        | 115927   |
| West                                  | 31774 | 9014.155 | 8486.553  | 0        | 115927   |
| East                                  | 8456  | 6973.032 | 6109.481  | 0        | 64261.35 |
| <b>Vis. sp. (intermediate)</b>        | 40230 | 6575.861 | 7148.262  | 0        | 115337.8 |
| West                                  | 31774 | 6839.093 | 7482.21   | 0        | 115337.8 |
| East                                  | 8456  | 5586.75  | 5612.884  | 0        | 58277.45 |
| <b>Vis. sp. (Charles et al.)</b>      | 40230 | 4814.13  | 6218.705  | 0        | 103138.6 |
| West                                  | 31774 | 5002.51  | 6494.542  | 0        | 103138.6 |
| East                                  | 8456  | 4106.28  | 4986.409  | 0        | 52665.52 |
| <b>German</b>                         | 44060 | .9846383 | .1229881  | 0        | 1        |
| West                                  | 33443 | .9810852 | .1362265  | 0        | 1        |
| East                                  | 10617 | .9979896 | .0447951  | 0        | 1        |
| <b>No school certificate</b>          | 44060 | .0116331 | .107229   | 0        | 1        |
| West                                  | 33443 | .0136275 | .1159405  | 0        | 1        |
| East                                  | 10617 | .0041391 | .0642061  | 0        | 1        |
| <b>Abitur</b>                         | 44060 | .2680587 | .4429538  | 0        | 1        |
| West                                  | 33443 | .2574117 | .437215   | 0        | 1        |
| East                                  | 10617 | .3080653 | .461721   | 0        | 1        |
| <b>University degree</b>              | 44060 | .1586378 | .3653426  | 0        | 1        |
| West                                  | 33443 | .1351734 | .3419141  | 0        | 1        |
| East                                  | 10617 | .246807  | .431179   | 0        | 1        |
| <b>Unemployment rate</b>              | 44060 | 9.916893 | 3.422887  | 5.8      | 18.5     |
| West                                  | 33443 | 8.39092  | 1.792516  | 5.8      | 13.4     |
| East                                  | 10617 | 15.65084 | 1.427645  | 12.5     | 18.5     |

Table 2: Descriptive statistics (1993).

| Variable                              | Obs   | Mean     | Std. Dev. | Min      | Max      |
|---------------------------------------|-------|----------|-----------|----------|----------|
| <b>Eastern Germany</b>                | 44060 | .2409669 | .4276751  | 0        | 1        |
| <b>Income</b>                         | 44060 | 49422.11 | 32184.7   | 0        | 413891.2 |
| West                                  | 33443 | 51983.49 | 33447.07  | 180.1126 | 413891.2 |
| East                                  | 10617 | 41353.9  | 26252.37  | 0        | 255966.2 |
| <b>Female</b>                         | 44060 | .3535633 | .478081   | 0        | 1        |
| West                                  | 33443 | .3207846 | .4667851  | 0        | 1        |
| East                                  | 10617 | .4568145 | .498155   | 0        | 1        |
| <b>Age</b>                            | 44060 | 51.94421 | 14.76441  | 20       | 85       |
| West                                  | 33443 | 52.12885 | 14.92885  | 20       | 85       |
| East                                  | 10617 | 51.36263 | 14.21904  | 20       | 85       |
| <b>No. of adults</b>                  | 42666 | 1.65919  | .4739871  | 1        | 2        |
| West                                  | 32380 | 1.653243 | .475945   | 1        | 2        |
| East                                  | 10286 | 1.677912 | .4672993  | 1        | 2        |
| <b>No. of children</b>                | 42666 | .5908217 | .9226065  | 0        | 4        |
| West                                  | 32380 | .6120754 | .9523091  | 0        | 4        |
| East                                  | 10286 | .523916  | .8185749  | 0        | 4        |
| <b>City</b>                           | 44060 | .2861779 | .4519787  | 0        | 1        |
| West                                  | 33443 | .3173758 | .465462   | 0        | 1        |
| East                                  | 10617 | .1879062 | .3906556  | 0        | 1        |
| <b>Savings</b>                        | 44060 | 7397.181 | 31962.66  | 0        | 2354566  |
| West                                  | 33443 | 8095.704 | 33450.42  | 0        | 2354566  |
| East                                  | 10617 | 5196.868 | 26622.53  | 0        | 2354566  |
| <b>log(mean income<sub>j</sub>)</b>   | 44060 | 10.80029 | .1212039  | 10.53121 | 10.90831 |
| West                                  | 33443 | 10.85491 | .0795621  | 10.55342 | 10.90831 |
| East                                  | 10617 | 10.62824 | .0450037  | 10.53121 | 10.70803 |
| <b>log(stddv. income<sub>j</sub>)</b> | 44060 | 10.34987 | .1232363  | 10.11308 | 10.48153 |
| West                                  | 33443 | 10.4061  | .0805907  | 10.15526 | 10.48153 |
| East                                  | 10617 | 10.17276 | .0352065  | 10.11308 | 10.23324 |
| <b>Vis. sp.</b>                       | 44060 | 7790.186 | 11618.9   | 0        | 208994.4 |
| West                                  | 33443 | 8080.084 | 11991.06  | 0        | 208994.4 |
| East                                  | 10617 | 6877.022 | 10306.97  | 0        | 167913.7 |
| <b>Vis. sp. (intermediate)</b>        | 44060 | 5240.168 | 10434.75  | 0        | 205133.2 |
| West                                  | 33443 | 5432.559 | 10753.49  | 0        | 205133.2 |
| East                                  | 10617 | 4634.147 | 9334.628  | 0        | 161557.2 |
| <b>Vis. sp. (Charles et al.)</b>      | 44060 | 3415.137 | 9468.123  | 0        | 185789.9 |
| West                                  | 33443 | 3538.737 | 9749.426  | 0        | 185789.9 |
| East                                  | 10617 | 3025.801 | 8510.259  | 0        | 157549.7 |
| <b>German</b>                         | 44060 | .9859283 | .117788   | 0        | 1        |
| West                                  | 33443 | .9823879 | .1315385  | 0        | 1        |
| East                                  | 10617 | .9970802 | .0539592  | 0        | 1        |
| <b>No school certificate</b>          | 44060 | .0055152 | .0740602  | 0        | 1        |
| West                                  | 33443 | .0063391 | .0793672  | 0        | 1        |
| East                                  | 10617 | .0029198 | .0539592  | 0        | 1        |
| <b>Abitur</b>                         | 44060 | .3331366 | .4713403  | 0        | 1        |
| West                                  | 33443 | .3252998 | .4684937  | 0        | 1        |
| East                                  | 10617 | .3578224 | .4793821  | 0        | 1        |
| <b>University degree</b>              | 44060 | .1673854 | .3733238  | 0        | 1        |
| West                                  | 33443 | .1542924 | .3612342  | 0        | 1        |
| East                                  | 10617 | .2086277 | .4063468  | 0        | 1        |
| <b>Unemployment rate</b>              | 44060 | 9.149369 | 3.813991  | 4.3      | 17.6     |
| West                                  | 33443 | 7.461959 | 2.562462  | 4.3      | 17.2     |
| East                                  | 10617 | 14.46462 | 1.569289  | 11.1     | 17.6     |

Table 3: Descriptive statistics (2008).

|                                 | (1)                   | (2)                   | (3)                   | (4)                   | (5)                         | (6)                         | (7)                         |
|---------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------------|-----------------------------|-----------------------------|
| ln(income)                      | .955***<br>(177.5)    | .965***<br>(173.91)   | .961***<br>(174.48)   | .96***<br>(162.24)    | .877***<br>(107.96)         | .875***<br>(107.52)         | .875***<br>(107.44)         |
| East Germany                    |                       | .091***<br>(13.5)     | .151***<br>(17.5)     | .151***<br>(17.53)    | .10***<br>(10.63)           | .201***<br>(8.54)           | .2***<br>(8.49)             |
| East Germany · 2008             |                       |                       | -.093***<br>(-7.4)    | -.093***<br>(-7.4)    | -.054***<br>(-4.22)         | -.124***<br>(-6.8)          | -.132***<br>(-7.04)         |
| 2008                            |                       |                       | -.212***<br>(-34.03)  | -.212***<br>(-33.95)  | -.17***<br>(-25.95)         | -.174***<br>(-23.57)        | -.168***<br>(-21.05)        |
| Female                          |                       |                       |                       | -.003<br>(-0.43)      | .072***<br>(9.68)           | .072***<br>(9.72)           | .072***<br>(9.7)            |
| Age                             |                       |                       |                       |                       | -.005***<br>(-3.25)         | -.005***<br>(-3.19)         | -.005***<br>(-3.22)         |
| Age <sup>2</sup>                |                       |                       |                       |                       | $2 \cdot 10^{-5}$<br>(1.55) | $2 \cdot 10^{-5}$<br>(1.49) | $2 \cdot 10^{-5}$<br>(1.52) |
| # of children                   |                       |                       |                       |                       | -.008***<br>(-2.76)         | -.008***<br>(-2.71)         | -.008***<br>(-2.73)         |
| # of adults                     |                       |                       |                       |                       | .216***<br>(22.82)          | .217***<br>(22.97)          | .216***<br>(22.86)          |
| City                            |                       |                       |                       |                       | .068***<br>(11.29)          | .065***<br>(10.45)          | .063***<br>(9.91)           |
| German                          |                       |                       |                       |                       | .105***<br>(4.43)           | .108***<br>(4.54)           | .107***<br>(4.5)            |
| No school certif.               |                       |                       |                       |                       | -.079**<br>(-2.48)          | -.078**<br>(-2.48)          | -.079**<br>(-2.49)          |
| <i>Abitur</i>                   |                       |                       |                       |                       | .058***<br>(7.23)           | .058***<br>(7.21)           | .057***<br>(7.17)           |
| University degree               |                       |                       |                       |                       | -.042***<br>(-4.32)         | -.043***<br>(-4.36)         | -.043***<br>(-4.36)         |
| ln(savings)                     |                       |                       |                       |                       | .018***<br>(19.9)           | .018***<br>(19.99)          | .018***<br>(19.99)          |
| ln(mean income <sub>j</sub> )   |                       |                       |                       |                       |                             | -.154**<br>(-2.15)          | -.1<br>(-1.3)               |
| ln(stddv. income <sub>j</sub> ) |                       |                       |                       |                       |                             | .288***<br>(4.86)           | .284***<br>(4.78)           |
| Unemployment rate <sub>j</sub>  |                       |                       |                       |                       |                             |                             | .003*<br>(1.76)             |
| Constant                        | -1.603***<br>(-27.81) | -1.735***<br>(-28.98) | -1.578***<br>(-26.53) | -1.571***<br>(-24.33) | -1.151***<br>(-15.65)       | -2.471***<br>(-4.99)        | -3.028***<br>(-5.21)        |
| N                               | 84290                 | 84290                 | 84290                 | 84290                 | 81862                       | 81862                       | 81862                       |
| R <sup>2</sup>                  | .38                   | .39                   | .40                   | .40                   | .41                         | .41                         | .41                         |
| F (East Ger., 2008)             |                       |                       | 36.37                 | 36.6                  | 21.5                        | 29.24                       | 19.64                       |
| p-value F-test                  |                       |                       | .0000                 | .0000                 | .0000                       | .0000                       | .0000                       |

Notes: t-statistics in brackets; \* significant at 10%; \*\* sign. at 5%; \*\*\* sign. at 1%

F (East Germany, 2008) shows F-statistic for  $East\ Germany_i + East\ Germany_i \times 2008 = 0$ .

Table 4: Visible consumption spending: East vs. West Germany. OLS regression results, robust standard errors.



|                                 | (1)                | (2)                   | (3)                  | (4)                   | (5)                               | (6)                               | (7)                               |
|---------------------------------|--------------------|-----------------------|----------------------|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------|
| ln(income)                      | .93***<br>(161.71) | .945***<br>(159.19)   | .937***<br>(160)     | .949***<br>(149.51)   | .792***<br>(94.55)                | .791***<br>(94.2)                 | .791***<br>(94.19)                |
| East Germany                    |                    | .128***<br>(17.2)     | .215***<br>(22.18)   | .21***<br>(21.7)      | .113***<br>(10.85)                | .188***<br>(7.29)                 | .185***<br>(7.17)                 |
| East Germany · 2008             |                    |                       | -.132***<br>(-9.61)  | -.132***<br>(-9.64)   | -.082***<br>(-5.84)               | -.128***<br>(-6.46)               | -.151***<br>(-7.38)               |
| 2008                            |                    |                       | -.361***<br>(-52.03) | -.364***<br>(-52.38)  | -.319***<br>(-44.01)              | -.318***<br>(-38.89)              | -.303***<br>(-34.43)              |
| Female                          |                    |                       |                      | .057***<br>(8.01)     | .189***<br>(22.38)                | .189***<br>(22.41)                | .189***<br>(22.37)                |
| Age                             |                    |                       |                      |                       | .003*<br>(1.84)                   | .003*<br>(1.88)                   | .003*<br>(1.8)                    |
| Age <sup>2</sup>                |                    |                       |                      |                       | $-7 \cdot 10^{-5}$ ***<br>(-4.49) | $-7 \cdot 10^{-5}$ ***<br>(-4.53) | $-7 \cdot 10^{-5}$ ***<br>(-4.46) |
| # of children                   |                    |                       |                      |                       | .045***<br>(13.9)                 | .046***<br>(13.92)                | .045***<br>(13.87)                |
| # of adults                     |                    |                       |                      |                       | .335***<br>(31.62)                | .336***<br>(31.67)                | .334***<br>(31.47)                |
| City                            |                    |                       |                      |                       | .028***<br>(4.31)                 | .029***<br>(4.17)                 | .023***<br>(3.27)                 |
| German                          |                    |                       |                      |                       | .067***<br>(2.62)                 | .069***<br>(2.69)                 | .067***<br>(2.59)                 |
| No school certif.               |                    |                       |                      |                       | -.072**<br>(-2.07)                | -.072**<br>(-2.07)                | -.073**<br>(-2.1)                 |
| <i>Abitur</i>                   |                    |                       |                      |                       | .01<br>(1.07)                     | .01<br>(1.07)                     | .009<br>(0.99)                    |
| University degree               |                    |                       |                      |                       | -.045***<br>(-4.1)                | -.046***<br>(-4.13)               | -.046***<br>(-4.13)               |
| ln(savings)                     |                    |                       |                      |                       | .013***<br>(12.79)                | .013***<br>(12.82)                | .013***<br>(12.82)                |
| ln(mean income <sub>j</sub> )   |                    |                       |                      |                       |                                   | -.032<br>(-0.4)                   | .11<br>(1.3)                      |
| ln(stddv. income <sub>j</sub> ) |                    |                       |                      |                       |                                   | .155**<br>(2.35)                  | .143**<br>(2.17)                  |
| Unemployment rate <sub>j</sub>  |                    |                       |                      |                       |                                   |                                   | .008***<br>(4.29)                 |
| Constant                        | -1.773<br>(-28.82) | -1.959***<br>(-30.64) | -1.689***<br>(-26.7) | -1.834***<br>(-26.46) | -.915***<br>(-11.79)              | -2.178***<br>(-4.03)              | -3.659***<br>(-5.79)              |
| N                               | 84290              | 84290                 | 84290                | 84290                 | 81862                             | 81862                             | 81862                             |
| R <sup>2</sup>                  | .32                | .32                   | .36                  | .36                   | .38                               | .38                               | .38                               |
| F (East Ger., 2008)             |                    |                       | 67.08                | 59.08                 | 8.92                              | 15.2                              | 4.39                              |
| p-value F-test                  |                    |                       | .0000                | .0000                 | .0028                             | .0001                             | .0362                             |

Notes: t-statistics in brackets; \* significant at 10%; \*\* sign. at 5%; \*\*\* sign. at 1%

F (East Germany, 2008) shows F-statistic for  $East\ Germany_i + East\ Germany_i \times 2008 = 0$ .

Table 5: Robustness Checks 1: Intermediate definition of visible consumption spending: East vs. West Germany. OLS regression results, robust standard errors.

|                                 | (1)                   | (2)                   | (3)                  | (4)                   | (5)                           | (6)                           | (7)                           |
|---------------------------------|-----------------------|-----------------------|----------------------|-----------------------|-------------------------------|-------------------------------|-------------------------------|
| ln(income)                      | .895***<br>(154.28)   | .907***<br>(152.31)   | .894***<br>(154.58)  | .926***<br>(146.31)   | .746***<br>(91.59)            | .744***<br>(91.22)            | .745***<br>(91.19)            |
| East Germany                    |                       | .102***<br>(12.61)    | .185***<br>(17.63)   | .173***<br>(16.47)    | .065***<br>(5.82)             | .141***<br>(5.11)             | .138***<br>(4.96)             |
| East Germany · 2008             |                       |                       | -.114***<br>(-7.68)  | -.115***<br>(-7.74)   | -.055***<br>(-3.67)           | -.095***<br>(-4.46)           | -.125***<br>(-5.68)           |
| 2008                            |                       |                       | -.529***<br>(-71.07) | -.536***<br>(-72.01)  | -.486***<br>(-63.05)          | -.48***<br>(-55.17)           | -.461***<br>(-49.09)          |
| Female                          |                       |                       |                      | .146***<br>(19.44)    | .329***<br>(35.25)            | .329***<br>(35.3)             | .329***<br>(35.26)            |
| Age                             |                       |                       |                      |                       | .002<br>(0.94)                | .002<br>(0.99)                | .002<br>(0.89)                |
| Age <sup>2</sup>                |                       |                       |                      |                       | $-3 \cdot 10^{-5}$<br>(-1.87) | $-3 \cdot 10^{-5}$<br>(-1.91) | $-3 \cdot 10^{-5}$<br>(-1.83) |
| # of children                   |                       |                       |                      |                       | .077***<br>(21.56)            | .077***<br>(21.58)            | .077***<br>(21.52)            |
| # of adults                     |                       |                       |                      |                       | .425***<br>(37.22)            | .425***<br>(37.24)            | .423***<br>(37.01)            |
| City                            |                       |                       |                      |                       | .032***<br>(4.53)             | .035***<br>(4.79)             | .027***<br>(3.68)             |
| German                          |                       |                       |                      |                       | .026<br>(0.93)                | .028<br>(0.99)                | .025<br>(0.87)                |
| No school certif.               |                       |                       |                      |                       | -.045<br>(-1.27)              | -.045<br>(-1.28)              | -.046<br>(-1.32)              |
| <i>Abitur</i>                   |                       |                       |                      |                       | -.004<br>(-0.46)              | -.004<br>(-0.45)              | -.005<br>(-0.54)              |
| University degree               |                       |                       |                      |                       | -.059***<br>(-4.93)           | -.059***<br>(-4.95)           | -.059***<br>(-4.95)           |
| ln(savings)                     |                       |                       |                      |                       | .014***<br>(13.72)            | .014***<br>(13.72)            | .014***<br>(13.72)            |
| ln(mean income <sub>j</sub> )   |                       |                       |                      |                       |                               | .09<br>(1.07)                 | .277***<br>(3.05)             |
| ln(stddv. income <sub>j</sub> ) |                       |                       |                      |                       |                               | .069<br>(0.97)                | .053<br>(0.75)                |
| Unemployment rate <sub>j</sub>  |                       |                       |                      |                       |                               |                               | .01***<br>(5.31)              |
| Constant                        | -1.866***<br>(-30.08) | -2.015***<br>(-31.42) | -1.61***<br>(-25.81) | -1.984***<br>(-28.74) | -1.024***<br>(-12.95)         | -2.712***<br>(-4.71)          | -4.667***<br>(-6.92)          |
| N                               | 84290                 | 84290                 | 84290                | 84290                 | 81862                         | 81862                         | 81862                         |
| R <sup>2</sup>                  | .27                   | .27                   | .33                  | .33                   | .36                           | .36                           | .36                           |
| F (East Ger., 2008)             |                       |                       | 43.59                | 29.34                 | 0.77                          | 7.93                          | 0.52                          |
| p-value F-test                  |                       |                       | .0000                | .0000                 | .3803                         | .0049                         | .4715                         |

Notes: t-statistics in brackets; \* significant at 10%; \*\* sign. at 5%; \*\*\* sign. at 1%

F (East Germany, 2008) shows F-statistic for  $East\ Germany_i + East\ Germany_i \times 2008 = 0$ .

Table 6: Robustness Checks 2: Definition of visible consumption spending taken from Charles et al. (2009): East vs. West Germany. OLS regression results, robust standard errors.

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