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**Conference Paper**

## Birthright citizenship and education - Do immigrant children need a passport to thrive?

Beiträge zur Jahrestagung des Vereins für Socialpolitik 2014: Evidenzbasierte Wirtschaftspolitik  
- Session: Labor Economics I, No. D13-V1

**Provided in Cooperation with:**

Verein für Socialpolitik / German Economic Association

*Suggested Citation:* Sajons, Christoph; Clots-Figueras, Irma (2014) : Birthright citizenship and education - Do immigrant children need a passport to thrive?, Beiträge zur Jahrestagung des Vereins für Socialpolitik 2014: Evidenzbasierte Wirtschaftspolitik - Session: Labor Economics I, No. D13-V1, ZBW - Deutsche Zentralbibliothek für Wirtschaftswissenschaften, Leibniz-Informationszentrum Wirtschaft, Kiel und Hamburg

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# **Birthright citizenship and education – Do immigrant children need a passport to thrive?**

Christoph Sajons\* and Irma Clots-Figueras\*\*

First version: February, 1st, 2014

**[Preliminary results; do not cite without permission of the authors]**

*Abstract:* This paper evaluates the effect of becoming citizen of the host-country at birth on educational outcomes of immigrant children in Germany. We exploit the introduction of birthright citizenship for newborn children in Germany starting on the 1<sup>st</sup> of January, 2000, to obtain difference-in-differences estimates for the effect of citizenship on the children's educational performance, in particular, their transition to different tracks of secondary school. Using data from the newly established National Education Panel Study (NEPS), the empirical results indicate an increase in the probability of migrant children to enter the middle school track rather than the lower one. This suggests that growing up with the citizenship of the host country has a beneficial impact on the later integration of migrant children.

**Keywords:** Birthright citizenship, integration, secondary school choice

**JEL-Classification:** I21, J15, J24, K37

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We are thankful for helpful comments and suggestions to Paolo Masella, Stefan Bauernschuster, Ludger Wößmann, Bernd Fitzenberger, and seminar participants at Freiburg University, Passau University, and the ifo Institut. Christoph Sajons furthermore gratefully acknowledges financial support from the Fritz-Thyssen-Foundation.

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## 1. Introduction

Immigration is considered as one of the most important components in any strategy to soften the problems of aging societies and maintain the standard of living of developed countries in the long-run (e.g., Storesletten, 2000, Chen and Fang, 2013). Its potential success, however, depends crucially on the effective integration of migrants and their descendants in their destination countries, in particular, in the areas of educational attainment and labor market performance. But study after study shows that the initial gap between migrants and natives in these areas persists over time, often continuing from generation to generation (e.g., Ammermueller, 2007; Algan et al., 2010; Frick and Wagner, 2001; Liebig, 2007; Lüdemann and Schwerdt, 2013; Riphahn, 2003; Schnepf, 2007). These findings sparked an intense political and scientific debate about the necessary conditions to foster successful integration.

In this paper, we examine a particular issue in this debate, namely, whether *birthright citizenship*, i.e., automatically becoming citizen of the host-country at birth, improves the integration of migrant children. There are two reasons to focus on automatic citizenship at birth. First, birthright citizenship is a highly sensitive political issue, as illustrated by the discussion about proposals in recent years to change the 14<sup>th</sup> amendment to the constitution in the US in order to avoid that “anchor babies” serve as “magnets of illegal immigration” (US Representative Steve King, cited by National Memo, 2013), or by the large and often emotional resilience on the conservative side against its introduction in Germany in 1999. Evaluating its effects can therefore contribute to rationalizing the issue. Second and more practically oriented, examining an automatic treatment that is independent of a person’s willingness and state of integration solves the empirical problems of selection bias and reverse causality, which usually prevent researchers from claiming causality in their analyses of the effects of obtaining citizenship on economic integration.

In our analysis, we concentrate on the effect of introducing birthright citizenship in Germany and its effect on the school career of the children of migrants. In particular, we examine the transition from primary to secondary school, which is organized in three separate tracks of different academic quality in Germany, in the following referred to as “low”, “middle”, and “high”.<sup>1</sup> Attendance to a particular school track is often considered a good predictor of later educational attainment and labor market possibilities (e.g., Anger et al.,

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<sup>1</sup> The difference in quality can be measured both in terms of input factors (peers, teacher salary, and academic curriculum) and outcomes (test score results, final degrees).

2010; Barban and White, 2011; Brunello and Checchi, 2007; Cobb-Clark et al., 2012), so anything that changes the distribution of migrant children at this early stage may also have a considerable impact on their later lives.<sup>2</sup>

To identify the causal impact of automatically obtaining the citizenship of the host country at birth, we apply a difference-in-differences approach comparing the probabilities to continue school in the middle or high-quality tracks between migrant children born shortly before and after the enactment date (1<sup>st</sup> of January, 2000) with their German counterparts of the same age. As all children born between July 1999 and June 2000 typically entered elementary school together in Germany, we thus evaluate the effect of automatic citizenship for children in the same grade, with the same school experience and curriculum, and the same contemporary environment, the only difference is that those born after the enactment date will have German citizenship at birth, while this is not the case for those born before.<sup>3</sup> By comparing with the German children of the same age, we additionally control for the systematic difference in the age of children born before and after the enactment, as well as for any other influence that may affect children born in 1999 and 2000 differently.

The empirical results suggest that growing up with the German citizenship significantly increases the probability to enter secondary school in the middle-quality track as opposed to continuing in the low-quality one. This finding is robust to different econometric specifications, as well as to excluding children born in December, 1999, and January, 2000, to control for potential sorting of births around the enactment date. Overall, this points toward an important role of citizenship in the early integration of young migrant children.

To the best of our knowledge, this is the first paper to evaluate the effect of a birthright citizenship reform on the educational outcomes of children. So far the literature has only analyzed the effects of the German citizenship reform and has focused on parental integration (Avitabile et al., 2013, and Sajons, 2012), return migration (Sajons, 2011) and immigrant's fertility (Avitabile et al., 2014).

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<sup>2</sup> Although this is a long-standing view among education researchers and practitioners, it may not be that strict in our days anymore due to several “second chances” built into the system, as recent research by Dustmann et al. (2012) suggests.

<sup>3</sup> This holds true for 11 out of 16 German states. The exact deadlines for school enrollment in the different states are reported in table 1 in the appendix.

The remainder of the paper starts by presenting the details of the citizenship reform act of 1999 in section 2. A theoretical discussion on why citizenship may affect educational performance follows in section 3. Section 4 introduces our difference-in-differences identification strategy. Section 5 presents the source of our data, the newly installed National Education Panel Study (NEPS). In section 6, we discuss the results and their robustness. Section 7 concludes.

## **2. The reform of the German citizenship law in 1999**

Although several waves of immigration had occurred in the past, Germany did not consider itself as an immigration country for a long time. Consequently, naturalization of non-German immigrants did not happen unless it was in the best interest of the country (Brubaker, 1992). Thus, a personal entitlement to naturalization was only introduced after the German reunification in 1990 and applicants had to meet strict conditions, especially, a minimum of 15 years of legal residence in Germany and the renouncement of the previous citizenship. Due to these restrictions, many immigrants still remained citizens of their home countries even after living in Germany for a very long time. This situation was perpetuated by the fact that the children of foreign-citizen parents did not become German citizens automatically either, which in some cases even caused migrants of the 3<sup>rd</sup> generation to remain foreign citizens. At the end of the millennium, the number of foreign-citizens living in Germany had therefore swollen to about 7.3 million persons (about 9% of the German population), out of which about 40% had lived there for more than 15 years already (Statistisches Bundesamt, 2001).

In order to spur the integration of this large part of the society, the newly-elected government of Chancellor Schröder enacted a wide-reaching reform in 1999 against strong resistance from the conservative opposition party. It contained two major elements to facilitate the access to citizenship, both coming into effect on the 1<sup>st</sup> of January, 2000. (1) It reduced the minimum residence requirement for naturalization from 15 to 8 years for adult migrants.<sup>4</sup> And (2), it introduced automatic German citizenship at birth for the newborn children of foreign-citizen parents (*birthright citizenship*) under the condition that at least one parent had legally lived in Germany for more than 8 years prior to birth and possessed a

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<sup>4</sup> On the other hand, the new law introduced obligatory language and institutional knowledge tests and an oath to the German constitution, which may have raised the inhibition threshold to apply for naturalization.

permanent residence permission. In addition to these two major changes, a transition regulation for children born between 1990 and 1999 offered their parents the possibility to apply retrospectively for the German citizenship for their children under the same conditions, but only throughout the year 2000.

What the reform did not change, however, was the general principle of denying dual citizenships. Although initial proposals had planned to accept it, the government needed to recede in this point in order to gain passage in the second chamber of parliament, the Bundesrat. This means that adult migrants who want to become German citizens have to forsake their old citizenship as a precondition. Furthermore, dual citizenship for the children of foreign citizens is also only temporarily accepted, as they are required to choose between their two citizenships when they become adults or at the latest when they turn 23.<sup>5</sup>

In terms of quantitative effects, it is difficult to judge whether the adult component will lead to higher naturalization rates among eligible migrants. Numbers from the German Statistical Office (Statistisches Bundesamt, 2013a) show an initial increase in naturalizations in the first year after enactment from around 114,000 persons in 1999 to approximately 187,000 in 2000 (out of which around 20,000 were children who took advantage of the transition regulation), but a slow reversal to previous levels afterwards, which were reached in 2007. Thus, the reduction of the minimum residence requirement may have only led to advancing naturalizations that were planned anyway. For children, on the other hand, the effect is easier to determine, as every child of foreign-citizen parents who becomes German citizen at birth now would not have got it without the reform – at least not until coming of age. In total, about 425,000 of these children were treated automatically at birth in the years from 2000 to 2011, which is roughly half of all the children born to foreign-citizen parents during that time (Statistisches Bundesamt, 2013b).

As the introduction of birthright citizenship thus seems to have a long lasting and significant impact on the German demographics, it is necessary to evaluate its possible effects on the affected children, in particular, their educational performance, as this is the first important step for their successful integration.

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<sup>5</sup> It is very likely that this feature will not come into effect, as the new German government after the 2013 elections plans to remove it completely.

### 3. Citizenship and education

Citizenship is not usually considered as a driving factor of educational performance, but there are two main channels through which obtaining the citizenship of the host country could affect educational careers of young migrant children: First, it may increase the returns to education and thereby also the amount of effort and resources put into it, not only by the children but also, and especially, from their parents. And second, it may reduce any potential discrimination by teachers and peers, such that measurable outcomes like marks and school track could improve for a given level of ability and effort. In the following, we want to explain these two channels in more detail.

#### *a) Higher returns to education*

Apart from the right to vote and get elected, obtaining the citizenship of a country usually entails some economic advantages (see Avitabile et al., 2014, for a closer description). The strongest is *gaining access to professions* that are restricted to citizens of the country. In the case of Germany, these are several positions in the public sector, like judges, attorneys, soldiers, and policemen, but there are also some private-sector jobs which are not accessible for foreign-citizens (except for citizens of other EU countries), especially in the health and legal sector. Examples are careers as physicians, dentists, pharmacists, or lawyers.

Next, possessing the German citizenship directly permits a person to *work and live in all other EU countries* and *facilitates international traveling*. Thus, it extends the potential labor market and is of great help in positions in travel intense sectors like tourism, logistics, controlling or consulting. Additionally, being a citizen of the host-country may serve as a *positive signal for potential employers* and thus improve the chances to obtain better-paid jobs. This may come both from indicating that she will stay there in the long-run, raising the profitability of investing into her human capital, and from lower administrative costs in terms of paperwork when employing a German citizen.<sup>6</sup> And finally, a migrant family who wanted to live and work in Germany only temporarily may decide to stay longer or even permanently in order to reap the possible advantages for the child with the German citizenship (Sajons,

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<sup>6</sup> The rare evidence for the impact of citizenship on the labor market supports this reasoning. An example is Duguet et al. (2007), who examine the recruiting process of companies in France with an experimental correspondence test and find that possessing the French citizenship increases the chances of applicants with Moroccan-sounding names.

2011). This would *increase the time horizon* in which any investment into education could pay off and thus its return.

*b) Less discrimination in school*

The school performance of migrant children may potentially be influenced by discrimination from two sides. On the one hand, there is evidence that migrant children, especially younger ones, are more likely to be treated badly by their classmates than German children, which tends to translate into worse test results (Mühlenweg, 2010). If possessing the German citizenship improves this situation somewhat, we would expect the children's performance to improve which would lead to a greater probability to continue on a higher-quality track.

On the other hand, several studies show that there is still some degree of discrimination against children with a migration background from the side of the teachers (Hönig and Wenz, 2011; Lüdemann and Schwerdt, 2012; Sprietsma, 2013). This holds, in particular, for the so-called "teacher recommendation" which advises parents about the most promising choice of school track in secondary school. Here, teachers have great leeway in judging the prospects of their students and it could be shown, that a similar performance may lead to different recommendations based on the perceived background of the student. So even if citizenship does not change the performance of a child directly, it may change the assessment of it and teachers' expectations about future performance. This could be the case, for instance, if teachers believe that parents of a child with German citizenship are more likely to intervene and invest in their child in case of difficulties at school. An indication for such an effect is given by Söhn (2008), who compares educational attainment levels of children of foreign-citizen migrants with those of children of ethnic-German immigrants from the former Eastern Europe who obtained the German citizenship directly upon entering Germany. The results show that the children of ethnic-German origin have a higher probability to complete their education with a degree from the "middle" school (the *Realschule*) although their initial connection to Germany and their knowledge of German was similar to that of other types of migrants.

Taken together, these two channels can be expected to affect the probability to enter a higher school track positively. In the following sections, we want to examine empirically whether this is actually the case.



#### 4. Identification strategy

To identify the causal effect of birthright citizenship for the children of foreign-citizen parents (henceforth, “migrant” children) on the transition to secondary school, we apply a difference-in-differences strategy comparing the school track of 5<sup>th</sup> graders<sup>7</sup> in the fall of 2010 between migrant and “German” children who are born before and after the enactment of birthright citizenship, but go to the same class. That is, in the first step, we look at the difference in school track attendance between migrant children in the second half of 1999 and the first half of 2000, i.e., we compare children who were not eligible for automatic birthright citizenship with children who were eligible. As regular school enrollment in Germany is not determined by the year of birth, but by some cutoff date within the year (usually the 30<sup>th</sup> of June)<sup>8</sup>, both of these groups entered school at the same time and have passed exactly the same time in school before our study.

Additionally, we ensure that all migrant families in the sample were also equally affected by the adult component of the law, the reduction of the minimum residence requirement for naturalization from 15 to 8 years. To do this, we restrict our sample to include only children whose parents were foreign citizens at the time of birth and at least one of them had been living in Germany for eight years or more already. This means that we only examine families in which the parents were eligible for naturalization themselves and their children would be treated automatically if they are born on or after the 1<sup>st</sup> of January, 2000. Thus, all migrant children in the sample should have very similar demographic and social backgrounds, the same school history up to this point, and be affected equally by general time trends and the adult component of the law. Therefore, the only two remaining distinctions between our treatment and control groups derive directly from whether a child was born before or after the enactment date. One is the difference in the treatment (automatic vs. optional citizenship), the other the corresponding difference in age, as children born in the first half of 2000 are, on average, six months younger than children born in the second half of 1999.

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<sup>7</sup> In Germany, the transition to secondary school commonly happens after 4th class, which is rather early in international comparison. The only exceptions are the states of Berlin and Brandenburg, in which primary school lasts for six years.

<sup>8</sup> See Table 1 for the exact enrollment cutoff dates in the individual German states in 2006, the year in which the cohort examined here entered school.

In a second step, we therefore need to control for the systematic difference in age, as research has shown that children who are older at school entry possess an advantage compared to their younger classmates (Mühlenweg and Puhani, 2010; Mühlenweg et al., 2012). We isolate the exclusive effect of citizenship by comparing the difference in school track attendance between the two groups of migrant children with the same difference between two similarly defined groups of children with German-citizen parents (henceforth “German” children). As both groups of German children are unaffected by the introduction of birthright citizenship but have the same average age differential, this cancels out any common age effect from our estimations.

There are two crucial issues for the validity of this design. The first one concerns *selective sorting* into treatment and control group by parents who are more or less willing to integrate into the German society. If all migrant families who are less willing to integrate have their children before the enactment of the reform and those more integration-friendly afterwards, our estimates for the effect of the reform would be strongly biased towards larger treatment effects. In our analysis, we minimize the potential impact of intentional selection by concentrating on children born within a narrow six-months window around the enactment date of the new policy. We argue that precise sorting in this limited time period is highly unlikely for the following reasons. (1) The timing of conception is not perfectly controllable, such that couples who would like to get a child before enactment could end up giving birth afterwards. Likewise, couples who postpone getting a child until after enactment may well receive it later in 2000, outside of our period of investigation. (2) Since details and passage of the reform were uncertain up until May, 1999, all births until February, 2000, were already predetermined when the bill obtained final approval by both chambers of the German parliament, making it impossible to significantly advance a planned birth in order to avoid the new law. (3) As the reform also granted parents of children born in late 1999 the opportunity to apply for the treatment through its transition regulation, there was only a small incentive to postpone any planned birth or to try to manipulate the registered birthday if it was directly before the cutoff. In addition, findings in Avitabile et al. (2014) show a small negative effect of birthright citizenship on the probability of foreign-citizen mothers to have a child, but the effect starts only in 2001, well outside the period of births considered in this paper.

A second issue could arise if the *common trend assumption* is violated for some reason. This could be the case, for instance, if other events or reforms happened during the childhood of the examined children that differentially affected the educational performance of children born in

1999 and 2000. To the best of our knowledge, nothing of this kind occurred between 2000 and 2010. In addition, while children in the control group spent half a year longer in kindergarten, on average, this does not affect our results, as it is directly linked to their older age at school entry which is accounted for in our design. Another possible violation of the common trend assumption would be, if the effect of age differed systematically between migrant and German children and we did not take this into account. In the empirical analysis, we therefore check whether allowing the linear trend in age to differ between the two groups substantially changes the results.

## 5. Data

### 5.1 Data sources

In this paper, we examine data from the newly established *National Education Panel Survey* (NEPS), which follows six starting cohorts from different ages (newborns, Kindergarten children, 5th graders, 9th graders, first-year college students, and young adults) over their educational career.<sup>9</sup> For the main part of this study, we analyze the first wave of data from starting cohort 3, which tracks the development of 5<sup>th</sup> graders starting in the fall of 2010. This is exactly the class of children born in the second half of 1999 and the first half of 2000 that is of interest for our analysis. The selection process is a multi-layered cluster sampling, with random selection of regular schools first, followed by a random selection of two 5<sup>th</sup> classes each, in which all students were asked to participate. All in all, about 5780 students answered the questionnaire in the first wave, answering questions about month of birth, country of birth, citizenship, school grades, school type, and the students' self-assessment of their own capacity. Furthermore, around 4150 parents agreed to provide detailed information about their own and the students' socio-economic background which is necessary to identify the target group of migrant children who became German citizens at birth.

For additional robustness and plausibility checks, we also use information from the first wave of interviews of starting cohort 4 (9<sup>th</sup> graders) and the German Microcensus of 2010 and 2011, a representative yearly survey of about 1% of all German households.

### 5.2 Sample

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<sup>9</sup> For more detailed information about the NEPS data, see Blossfeld et al. (2011).

To obtain our sample of target and comparison group children, we impose several restrictions. (1) The children have to be born between July, 1999, and June, 2000, as these are the ones regularly enrolled to school. This removes any influence of retentions or early enrollment from the analysis. (2) The country of birth has to be Germany, as only children born there could be affected by birthright citizenship. (3) The children have to live with either their natural parents or with a single natural parent. Families in which one of the parents is not the natural parent of the child are excluded, because it is impossible to infer in these cases whether the child is affected by the reform or not.

For the group of migrant children, additional constraints are applied to identify those whose parents fulfilled the requirements for automatic citizenship at the time of their birth. (4) Both parents (or the single parent) had to be foreign-citizens at the time of birth, i.e., a possible naturalization of either parent has to have happened afterwards. (5) At least one of the parents has to have lived in Germany for more than eight years prior to the birth of the child. (6) At least one parent has to possess the permanent residence permission. As this information is not available for the past, we take current status as best proxy available.

The resulting sample consists of 2318 children, from which 119 had foreign-citizen parents and 2199 German-citizen parents at the time of birth. Table 2 presents the descriptive statistics for each group, including information on the children themselves, the parent who answered the questionnaire, the partner of that parent if present in the household, and the household in total. Significant differences in means on at least the 10% level are marked by bold numbers. The statistics show that, as expected, the two groups differ systematically on most of the socio-economic characteristics. For our empirical analysis, this does not cause much concern, however, as only large and uncontrolled changes in these differences from one birth year-cohort to the next could affect the results in our DiD framework.

Table 3 therefore reports the differences between migrant and German children for each birth-year cohort separately (columns 3 and 6) and displays the change in the difference from the 1999 cohort to the 2000 one (column 7). When the change in differences is statistically significant, the respective number in column 7 is again written in bold. In contrast to the simple comparison of means between the two groups shown in table 2, most of the changes in differences are small, meaning that the average difference between the two groups does not vary significantly in one way or another between one birth-year cohort and the next. Only a handful of characteristics display significant changes in differences, including the

fraction of children who possess German citizenship, which is supposed to increase among the migrant children from the cohort of 1999 to the one of 2000 due to the effects of the citizenship reform. This supports the validity of taking German children as comparison group in our DiD strategy.

## 6. Results

### 6.1 Transition to secondary school

The focus of this paper lies on the transition of students from uniform elementary school to one of the three different tracks of secondary school, which we have called “low”, “middle”, and “high” (*Hauptschule*, *Realschule*, and *Gymnasium*, respectively) according to their academic quality. In order to estimate the causal effect of birthright citizenship on school track attendance in secondary school, we run various specifications of the following linear probability model, in which the outcome variable is either the probability to attend the highest track (*Gymnasium*), the middle track (*Realschule*), or either one of the two:

$$dep\ var_{it} = \alpha_0 + \alpha_1 After_t + \alpha_2 Treated_i + \alpha_3 (After * Treated)_{it} + \gamma X_{it} + \epsilon_{it} \quad (1)$$

In this equation, *After* indicates whether a child was born after the reform, i.e., in the first half of 2000, *Treated* shows whether someone’s parents were foreign-citizens at the time of birth which would fulfill the requirements for birthright citizenship, and *X* is a vector of controls for personal and household characteristics, as well as characteristics of the parents (this includes basically all the variables reported in tables 2 and 3, except for the German citizenship of the child).<sup>10</sup>

Table 4 displays the estimated coefficients of interest,  $\alpha_3$ , for our three outcome variables under four specifications that differ in the amount and type of control variables used. The numbers in the first column represent unconditional DiD estimates, followed by specifications in columns 2 and 3 which control for either personal (gender, age, birth weight,

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<sup>10</sup> Missing values in any of the control variables are set to zero to avoid losing observations, with a new dummy variable in the regression indicating the imputation.

birth height, and whether German is one of the child's mother tongues) or household characteristics (number of persons in the household under the age of 14, the educational level of the parents, household income, and unemployment of the parents). The full set of controls is included in column 4.

Looking at table 4, we first observe that the results are remarkably stable across specifications, suggesting that the DiD approach works well in accounting for much of the influence of potentially confounding factors. The point estimates are in a range between -7 to -14% points for the probability to attend the high-quality school track, Gymnasium, between +21 and +23% p. for going to the middle track, and between +11 to +15% p. for attending either one, but only the result for the middle track, Realschule, is statistically significant. Surprisingly, this positive impact on going to the middle track seems to come at the expense of both the high and the low track, indicating that the effect of automatically obtaining citizenship at birth may not be monotonous over the whole distribution of children.

## *6.2 Robustness checks*

In order to check the robustness of these results, we conduct a series of further tests for robustness and plausibility. The results are presented in table 5. To facilitate the comparison with the baseline estimates above, we include the results of the specification with full controls in column 1 as benchmark. In our first test, we check whether the results are driven by our choice of German children as comparison group. We thus apply exactly the same methodology, but use the children of mixed couples as comparison group instead of German children, i.e., couples in which one partner is a German citizen but the other one is not. These children are more similar to our migrant children in terms of their migration background, but are not affected by the introduction of birthright citizenship, as they receive the German citizenship due to their German origin independent of their year of birth. On the other hand, using children from mixed families as comparison group comes at the price of a much smaller sample, reducing the precision of the estimates.

The results for the DiD analysis with this second comparison group are reported in column 2 of table 5. They show smaller coefficients than in the benchmark scenario and none reaches significance at standard confidence levels, but the pattern exactly replicates the one from the baseline specification. We have a sizable positive impact on the probability to attend the middle school track (+ 9% p.), an only slightly negative effect on going to the highest

track, and a positive coefficient for attending either of the two higher tracks. Thus, it confirms a positive impact of birthright citizenship, but suggests that our identification strategy may pick-up something that all children with migration background share, but children of German parents do not.

This interpretation is supported by the results of our second test, a “placebo” experiment in which we conduct the same analysis again, but this time replacing the migrant children by mixed children as treatment group. As mixed children share the migration background of the migrant children, but should not be affected in any way by the introduction of birthright citizenship, we would expect insignificant estimates for our DiD comparison with the German children. This is not the case, however, as both the negative effect of -10% p. on attending a Gymnasium and the positive effect of 11.2% p. are statistically significant. These results suggest that there may be a systematic difference between younger and older children with respect to the transition to secondary school that applies to the children of both migrant and mixed parents, but not to German children, or only to a smaller extent.

One possibility could be a larger age-at-school-entry effect for children with migration background than for German children. As Mühlenweg et al. (2012) show, children tend to develop better during school when they are comparatively older at school entry than their classmates. Furthermore, Mühlenweg (2010) also finds that children who are relatively young within their grade have a significantly higher probability of getting mobbed or experiencing violence, in particular, if they additionally have a migration background. For the present study, this could mean that it is disproportionally harder for young migrant children to perform well and manage to go to a higher school track than for young German children, such that our DiD specifications so far did not manage to control properly for the age effect.

We examine this possibility by introducing an interaction term in our benchmark specification between our *Age* variable, defined as months younger or older than children born in January, 2000, and the indicator for having two foreign-citizen parents, *Migrant*. Doing so, we allow the linear trend in age to differ between migrant and German children. The estimates of this specification support this argument. As reported in column 4 of table 5, the previously negative (but insignificant) estimate for the effect of birthright citizenship on going to Gymnasium has now vanished completely, while the positive and large effects on attending Realschule or going to either one of the higher school tracks remain (+21 and +27% p., respectively), although only the latter is statistically significant.

Taken together, the results obtained so far point towards a significant and positive causal effect of growing up with the citizenship of the host country on the educational trajectory of young migrant children.

*[We plan to conduct further tests for this age effect with data from starting cohort 4 (9<sup>th</sup> graders) of the NEPS, as well as plausibility checks with information from the Microcensus 2010 and 2011.]*

### 6.3 Channels

As obtaining the German citizenship at birth seems to positively influence the transition to secondary school, the next step in the analysis is to examine through which channels this effect materializes. Leaning on our discussion in section 3, we try to decompose the effect into the two factors discussed above, *higher returns to education* and *lower discrimination*. To do this, we apply the same empirical strategy as before to two sets of additional outcome variables. The first is intermediate outputs that directly enter the decision about the further school track from the side of the school, the student's marks in German and Maths in 4<sup>th</sup> grade and the track recommendation of the student's class teacher. The second set of interesting outcome variables in this context is measures of the input that students and their parents put into learning and studying, like the amount of time typically used to do homework, attitudes towards learning and the importance of education for later work, paying private teachers for additional lessons, etc.

[yet to be done]

## 7. Conclusions

This study provides empirical evidence that automatically obtaining the citizenship of the host-country at birth has a positive impact on the educational integration of young migrant children. We use the introduction of birthright citizenship in Germany at the beginning of 2000 as a quasi-natural experiment and show that it has significantly increased the probability of children from the affected birth-year cohort to enter one of the two higher tracks of secondary school. As education is widely acknowledged as the key to successful integration into the host-country society and its labor market, granting birthright citizenship may thus be a very efficient and inexpensive way for policy-makers to help dealing with the challenges



that may accompany the immigration that will be necessary to alleviate the burdens of demographic change in many Western countries.

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**Table 1***Deadlines for school enrollment in 2006 and duration of elementary school, by state*

<i>State</i>	Deadline for regular registration in 2006 *	Duration of elementary school
Baden-Württemberg	<b>August, 31</b>	4 years
Bayern	<b>August, 31</b>	4 years
Berlin	<b>December, 31</b>	<b>6 years</b>
Brandenburg	<b>September, 30</b>	<b>6 years</b>
Bremen	June, 30	4 years
Hamburg	June, 30	4 years
Hessen	June, 30	<b>4-6 years **</b>
Mecklenburg-Vorpommern	June, 30	4 years
Niedersachsen	June, 30	4 years
Nordrhein-Westfalen	June, 30	4 years
Rheinland-Pfalz	June, 30	4 years
Saarland	June, 30	4 years
Sachsen	June, 30	4 years
Sachsen-Anhalt	June, 30	4 years
Schleswig-Holstein	June, 30	4 years
Thüringen	<b>August, 1</b>	4 years

\* Children turning 6 before that day have to enroll in school that year. If the birthday is later, their parents would need to file a special request to enroll, otherwise they stay for another year in the kindergarten.

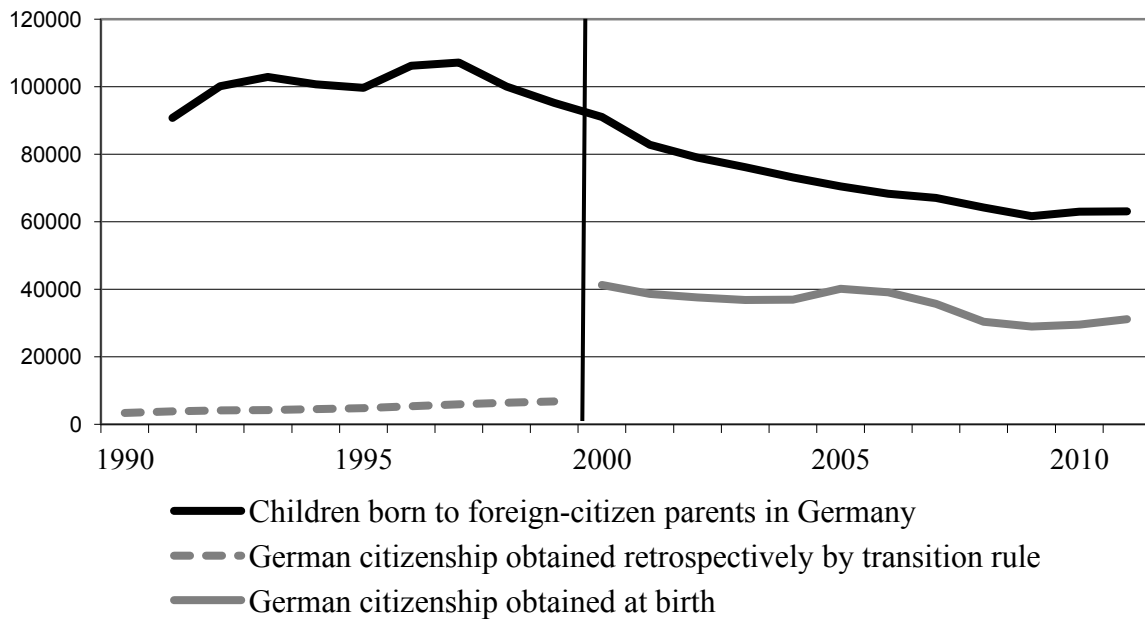
\*\* A small fraction of children enters an "orientation phase" of up to two years after the 4th class.

Note: Information marked in bold represent deviations from the general rule.

Source: Berthold (2008)

**Figure 1**

*Children of foreign-citizen parents and receipt of German citizenship by year of birth*



Note: Only children with two foreign-citizen parents are considered.

Source: German Statistical Office

**Table 2**  
*Descriptive statistics for "migrant" and "German" children*

<i>Variable</i>	<b>Migrant children</b>			<b>German children</b>			<i>Variable</i>	<b>Migrant children</b>			<b>German children</b>		
	Mean	St. Dev.	Obs.	Mean	St. Dev.	Obs.		Mean	St. Dev.	Obs.	Mean	St. Dev.	Obs.
<b>Characteristics of the child:</b>							<b>Household characteristics:</b>						
Female	0.538	0.501	119	0.474	0.499	2199	Parents married	<b>0.916</b>	0.279	119	<b>0.838</b>	0.368	2199
Age *	<b>-0.63</b>	3.03	119	<b>0.12</b>	3.33	2199	No. of children under 14	<b>2.1</b>	1.0	119	<b>1.8</b>	0.8	2196
Birth height	51.7	3.1	113	51.4	3.4	2138	Household income	<b>26.4</b>	10.6	106	<b>37.4</b>	38.1	1846
Birth weight	3328	654	116	3362	628	2160	[in 100 €]						
German as mother tongue	<b>0.531</b>	0.501	113	<b>0.987</b>	0.114	2037							
German citizenship	<b>0.630</b>	0.485	119	<b>1.000</b>	0.021	2199							
<b>Characteristics of the responding parent:</b>							<b>Characteristics of the other parent:</b>						
Female	<b>0.672</b>	0.471	119	<b>0.853</b>	0.355	2199	Female	<b>0.349</b>	0.479	109	<b>0.154</b>	0.361	1827
Age	<b>38.8</b>	5.1	119	<b>41.7</b>	5.1	2199	Age	<b>39.5</b>	5.0	90	<b>43.7</b>	5.2	1827
Education: Hauptschule	<b>0.627</b>	0.487	75	<b>0.134</b>	0.341	2141	Education: Hauptschule	<b>0.821</b>	0.389	39	<b>0.241</b>	0.428	1754
Education: Realschule	<b>0.240</b>	0.430	75	<b>0.441</b>	0.497	2141	Education: Realschule	<b>0.077</b>	0.270	39	<b>0.351</b>	0.477	1754
Education: Gymnasium	<b>0.133</b>	0.342	75	<b>0.425</b>	0.494	2141	Education: Gymnasium	<b>0.103</b>	0.307	39	<b>0.408</b>	0.492	1754
Foreign born	<b>0.731</b>	0.446	104	<b>0.048</b>	0.214	2042	Foreign born	<b>0.810</b>	0.395	105	<b>0.064</b>	0.244	1992
Years since arrival	<b>26.0</b>	7.8	80	<b>22.5</b>	8.6	99	Years since arrival	22.3	8.1	71	24.1	9.8	93
German citizenship	<b>0.261</b>	0.441	119	<b>1.000</b>	0.000	2199	German citizenship	<b>0.144</b>	0.354	90	<b>1.000</b>	0.000	1827
Employed	<b>0.672</b>	0.471	119	<b>0.805</b>	0.396	2198	Employed	<b>0.700</b>	0.461	90	<b>0.940</b>	0.237	1826

\* Age of the children is defined as months older (positive) or younger (negative) than children born in January, 2000.

Note: Means in **bold** letter indicate statistically significant differences on at least the 10% level.

Data: NEPS 2010, Starting Cohort 3

**Table 3**  
*Changes in differences between "migrant" and "German" children*

	Birth cohorts 1999			Birth cohorts 2000			
<i>Variable</i>	Migrant	German	Diff (G-M)	Migrant	German	Diff (G-M)	$\Delta$ Diff (00-99)
<b>Characteristics of the child:</b>							
Female	0.526	0.448	-0.078	0.543	0.497	-0.047	0.031
Age *	2.9	3.2	0.3	-2.3	-2.5	-0.2	-0.5
Birth height	52.4	51.4	-0.9	51.3	51.4	0.1	1.0
Birth weight	3476	3380	-96	3257	3347	91	187
German as mother tongue	0.583	0.986	0.403	0.506	0.987	0.481	0.078
German citizenship	0.342	1.000	0.658	0.765	0.999	0.234	<b>-0.424</b>
<b>Characteristics of the responding parent:</b>							
Female	0.711	0.844	0.134	0.654	0.860	0.205	0.072
Age	37.9	41.6	3.7	39.2	41.9	2.6	-1.1
Education: Hauptschule	0.769	0.144	-0.626	0.551	0.126	-0.425	<b>0.200</b>
Education: Realschule	0.231	0.457	0.226	0.245	0.427	0.182	-0.044
Education: Gymnasium	0.000	0.399	0.399	0.204	0.447	0.243	<b>-0.156</b>
Foreign born	0.618	0.049	-0.569	0.786	0.048	-0.738	<b>-0.169</b>
Years since arrival	24.1	21.3	-2.7	26.7	23.5	-3.2	-0.4
German citizenship	0.237	1.000	0.763	0.272	1.000	0.728	-0.035
Employed	0.658	0.814	0.156	0.679	0.798	0.119	-0.037
<b>Characteristics of the other parent:</b>							
Female	0.278	0.160	-0.118	0.384	0.149	-0.234	-0.116
Age	39.7	43.6	3.9	39.4	43.8	4.4	0.5
Education: Hauptschule	0.846	0.277	-0.569	0.808	0.212	-0.596	-0.027
Education: Realschule	0.000	0.355	0.355	0.115	0.347	0.232	<b>-0.122</b>
Education: Gymnasium	0.154	0.368	0.215	0.077	0.441	0.364	0.149
Foreign born	0.758	0.072	-0.686	0.833	0.057	-0.777	-0.091
Years since arrival	21.6	22.7	1.2	22.8	25.3	2.5	1.4
German citizenship	0.200	1.000	0.800	0.109	1.000	0.891	0.091
Employed	0.743	0.935	0.193	0.673	0.944	0.272	0.079
<b>Household characteristics:</b>							
Parents married	0.947	0.818	-0.130	0.901	0.856	-0.046	0.084
No. of children under 14	2.1	1.8	-0.3	2.1	1.9	-0.3	0.0
Household income	25.8	35.6	9.8	26.7	38.9	12.1	2.4
[in 100 €]							

\* Age of the children is defined as months older (positive) or younger (negative) than children born in January, 2000.

Note: Numbers in **bold** letters indicate statistically significant differences on at least the 10% level.

Data: NEPS 2010, Starting Cohort 3



**Table 4**  
*Benchmark DiD results: Migrants vs. German children*

<i>Outcome</i>	<b>Effect on the transition to ...</b>			
	(1)	(2)	(3)	(4)
"High track" <i>Gymnasium</i>	-0.093 (0.102) {2180}	-0.071 (0.102) {2180}	-0.144 (0.098) {2180}	-0.133 (0.096) {2180}
"Middle track" <i>Realschule</i>	<b>0.222**</b> (0.092) {2012}	<b>0.211**</b> (0.092) {2012}	<b>0.211**</b> (0.092) {2012}	<b>0.23**</b> (0.093) {2012}
"High" or "middle" track ( <i>Gymnasium</i> or <i>Realschule</i> )	0.142 (0.097) {2012}	0.155 (0.097) {2012}	0.109 (0.098) {2012}	0.116 (0.097) {2012}
Personal charact.	No	Yes	No	Yes
Household charact.	No	No	Yes	Yes

\* = 10%, \*\* = 5%, \*\*\* = 1% significance levels

Notes: (1) The coefficients represent the estimates of the DiD variable of interest "after\*treated" for each specification. (2) Robust standard errors are reported in parentheses, the number of observations for each regression in curly brackets.

Data: *NEPS 2010, Starting Cohort 3*

**Table 5***Robustness checks: Transition to secondary school type*

<i>Outcome</i>	Benchmark case (1)	Migrants vs. mixed (2)	Mixed vs. Germans (3)	Different trend in age (4)
"High track" <i>Gymnasium</i>	-0.133 (0.096) {2180}	-0.02 (0.110) {402}	<b>-0.102*</b> (0.057) {2360}	0.025 (0.164) {2180}
"Middle track" <i>Realschule</i>	<b>0.23**</b> (0.093) {2012}	0.09 (0.105) {371}	<b>0.112**</b> (0.055) {2179}	0.217 (0.164) {2012}
"High" or "middle" track ( <i>Gymnasium</i> or <i>Realschule</i> )	0.116 (0.097) {2012}	0.088 (0.105) {371}	0.017 (0.044) {2179}	<b>0.274*</b> (0.145) {2012}
Personal charact.	Yes	Yes	Yes	Yes
Household charact.	Yes	Yes	Yes	Yes

\* = 10%, \*\* = 5%, \*\*\* = 1% significance levels

Notes: (1) The coefficients represent the estimates of the DiD variable of interest "after\*treated" for each specification. (2) Robust standard errors reported in parentheses, the number of observations for each model in curly brackets.

Data: *NEPS 2010, Starting Cohort 3*