

**DEPARTMENT OF ECONOMICS AND FINANCE**  
**SCHOOL OF BUSINESS AND ECONOMICS**  
**UNIVERSITY OF CANTERBURY**  
**CHRISTCHURCH, NEW ZEALAND**

**The One-Child Policy and Chinese Saving Behavior**

**Zhongchen Song**  
**Tom Coupé**  
**W. Robert Reed**

***WORKING PAPER***

**No. 10/2019**

**Department of Economics and Finance**  
**School of Business**  
**University of Canterbury**  
**Private Bag 4800, Christchurch**  
**New Zealand**

## WORKING PAPER No. 10/2019

### The One-Child Policy and Chinese Saving Behavior

Zhongchen Song<sup>1</sup>

Tom Coupé<sup>1†</sup>

W. Robert Reed<sup>1</sup>

October 2019

**Abstract:** Researchers have long puzzled over China's high saving rate. Some have hypothesized that the explanation lies with China's One-Child Policy (OCP). According to this hypothesis, faced with fewer children to support them in their old age, Chinese parents increased their saving to finance retirement. Previous research relied on empirical studies of the relationship between children and saving behavior. However, all of these studies based their analysis on data after the OCP was implemented. Their implicit counterfactual for China without an OCP was households with multiple children living in an OCP environment. In contrast, we compare Chinese people with people from regions that do not have restrictive population policies (Taiwan, Hong Kong, Singapore, Malaysia, Japan, and South Korea). These regions share many cultural and demographic characteristics with China that suggest they can be used as a counterfactual for China. This approach also enables us to employ a Blinder-Oaxaca decomposition procedure to identify the different channels by which children could affect savings. Our main finding is that there is little difference in the saving behavior of Chinese people with their regional counterfactuals. This is evidence against the hypothesis that the OCP was a major contributor to China's high saving rate. It also suggests that the recent relaxation of the OCP cannot be counted upon to boost Chinese consumption.

**Keywords:** China, One-Child Policy, Saving rate, Demographics, Blinder-Oaxaca decomposition.

**JEL Classifications:** D14, E21, J13, J18, O10

Acknowledgments: Zhongchen Song thanks participants at the Australian Social Policy Conference, University of New South Wales, Sydney, September 9-11, for helpful comments and discussions.

<sup>1</sup> Department of Economics and Finance, University of Canterbury, NEW ZEALAND

†Corresponding author: Tom Coupé, email: tom.coupe@canterbury.ac.nz

## I. INTRODUCTION

The Chinese household saving rate, defined as overall household savings divided by gross disposable income, has increased dramatically since the 1970s. It peaked at around 40% in 2010 and currently is around 36%. This is approximately six times higher than the OECD average (OECD, 2019). In fact, the gross saving rate of China is among the highest of the 170 countries monitored by the World Bank (World Bank, 2019).

Understanding why China's saving rate is so high is important, as many believe that savings, via their effect on investment, have been the driving force behind China's economic growth. The connection is easy to make. In 2017, investment accounted for 44.41% of China's GDP, compared to a world average of 23% (CEIC, 2017). Accordingly, China's high saving rate has been the subject of much recent research (Chen & Yang, 2013; Li, Whally & Zhao, 2013, 2015; Wang & Wen, 2012; Feng, He & Sato, 2011; Chu & Wen, 2017; Wei & Zhang, 2011; Chamon & Prasad, 2010; Chamon, Liu & Prasad 2013).

One explanation that has received considerable attention is the role of China's "One-Child Policy" (OCP), introduced in 1979. This policy limited the number of children parents could have. Since the implementation of the OCP, China's fertility rate, the average number of children born to a woman over her lifetime, has dropped from approximately 3.8 to 1.6 (World Bank, 2019).

Given the concurrence in timing of the implementation of the OCP and the increase in China's saving rate, it is tempting to assume a causal link. This link has been supported by a number of studies. Zhou (2014); Ge, Yang & Zhang (2018); Lugauer, Ni & Yin (2017); Curtis, Lugauer, & Mark (2015); He & Zhang,(2013); and Choukhmane, Coeurdacier & Jin (2014) all conclude that the OCP has been a contributing factor, some even conclude a substantial contributing factor, to China's high saving rate.

These studies draw their conclusion from estimating a "savings function", the relationship between number of children and savings. In every case, this relationship is estimated using data from China following the introduction of the OCP. The implicit assumption is that the savings function is unaffected by the OCP, and that the OCP only affects savings through its impact on number of children. For the counterfactual of Chinese saving behavior without the

OCP, these studies rely on the saving behavior of families with more than one child, even though they are observed only after the OCP was implemented.

Our study differs from these previous studies in two ways. For our counterfactual, we use saving behavior from other Asian regions without the OCP. Further, we allow the impact of the OCP to affect both the number of children (the “endowment effect”), and the relationship between number of children and savings (the “coefficient effect”). To disentangle these effects, we employ the Blinder-Oaxaca decomposition (Blinder, 1973; Oaxaca, 1973).

We are able to do this by merging data from the Gallup World Poll and the Global Findex database. This allows us to compare the saving behavior of people in China to the saving behavior of people in other Asian regions without the OCP. Unlike most of the existing literature, we find little evidence to suggest that the OCP has had a major effect on savings in China.

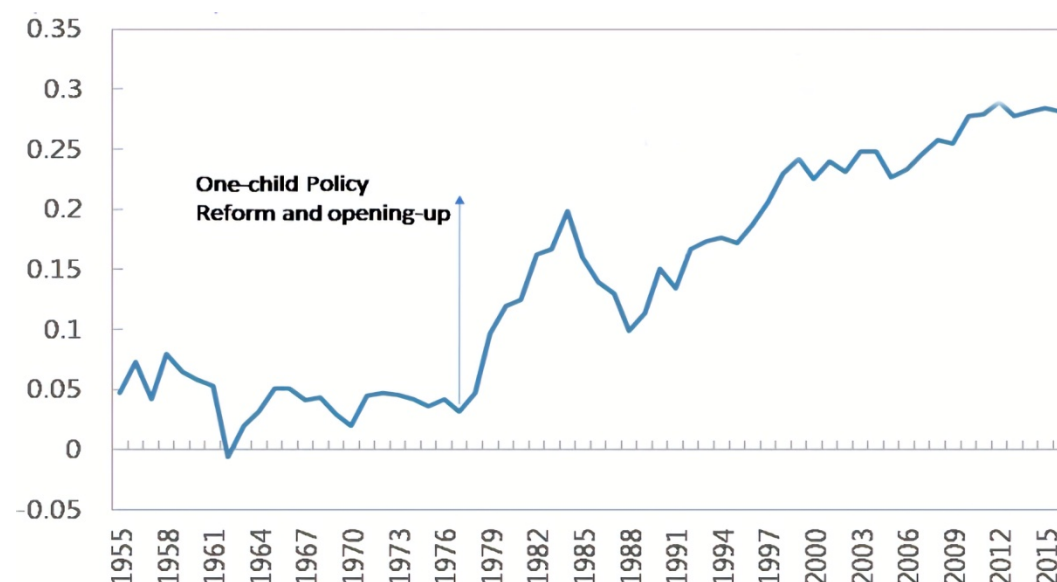
The remainder of the paper is structured as follows: Section II provides contextual information and a literature review on the topic. Section III discusses and briefly describes our data. Section IV presents our methodology. Section V discusses our empirical results and Section VI concludes.

## **II. BACKGROUND**

FIGURE 1 shows that China’s saving rate has been increasing since the 1970s. A major increase took place in the six years between 1978 and 1984, during which the saving rate increased by 15%. Several explanations have been offered for this increase.

One approach to understanding this phenomenon has focused on rising property prices. Since China’s housing reform, housing prices in China have increased dramatically. Chen & Yang (2013) estimate the impact of the rise of housing prices on saving rates in China using survey data for 2002 and 2007. They conclude that rising housing prices explain 47% of the rise in China’s saving rate. Wang & Wen (2012) used simulations with Chinese time-series data on household income, housing prices, and demographics. Contrary to Chen & Yang, their analysis found that rising mortgage costs increased the aggregate saving rate by at most 2 to 4 percentage points. Li, Whally, & Zhao (2013) also found no evidence linking housing prices to

household saving behavior based on data from the Chinese household income project<sup>1</sup>. Finally, Chamon & Prasad (2010) estimated that saving behavior related to homeownership could account for only 3 percentage points of the increase in China's saving rate.



**FIGURE 1: CHINA'S SAVING RATE, 1955-2015 (SOURCE: IMF, 2017)**

Another strand of the literature has focused on pension reforms. Chamon, Liu, & Prasad (2013) calibrate a model of savings and conclude that a significant increase in household savings can be explained by the combination of rising income uncertainty and pension reforms. They estimate that, together, these account for two-thirds of the increase in China's urban household saving rate. In contrast, Feng, He & Sato (2011) estimated a smaller effect. They concluded that pension reform in China increased household savings by 6-9 percentage points for citizens aged 25-29, and 3 percentage points for people aged 50-59.

Others have investigated how sex imbalances affect the saving rate. Wei & Zhang (2011), for example, point to the competitive saving motive as a possible explanation for high Chinese saving rates. According to this motive, Chinese parents with a son increase their savings to make their child a relatively more attractive marriage partner. It follows that saving rates will increase as the sex ratio (the ratio of male to a female) increases. Wei & Zhang conclude that

<sup>1</sup> The Chinese Household Income Project, measures and estimates the distribution of personal income and related economic factors in both rural and urban areas of China, there are four rounds of this survey, 1988, 1995, 2002 and 2007. More information of the survey can be found on <http://www.ciidbnu.org/>.

this factor can account for more than half of the increase in the household saving rate between 1990 and 2007.

The mixed findings from these previous studies leaves ample room for alternative explanations of China's high saving rate. One explanation that has received much attention is the One-Child Policy (OCP). The OCP was introduced in 1979, and later modified in the 1980s to allow minority and rural parents to have a second child if their first child was a daughter. The policy was terminated in 2015 and has been credited with preventing approximately 400 million births (Whyle, Feng & Cai (2015)).

An often-made argument linking fewer children to greater saving relates to retirement. Children are commonly viewed as a source of old-age support. Parents have children when they are young, in expectation that the children will make financial transfers to them when they are old. In this sense, children and saving are viewed as financial substitutes. Parents with more children can afford to save less for retirement. Parents with fewer children need to save more to ensure adequate retirement support. Thus, faced with a restriction on the number of children they are allowed to have, parents may choose to save more (Choukhmane, Coeurdacier & Jin, 2014). Of course, such an outcome is not certain. Rather than saving more, families could invest more in the one child they are allowed to have. Alternatively, if children are consumption rather than investment goods, parents could divert consumption to other outlets rather than save.

To be able to estimate the overall impact of the OCP on savings, one would ideally compare the observed savings of Chinese households under the OCP to what savings would be like without the OCP. The counterfactual would be an imaginary China identical in every respect to the China we currently observe, except that no OCP would have been implemented. Of course, the ideal counterfactual doesn't exist, hence researchers have had to come up with imperfect counterfactuals.

TABLE 1 reports what previous studies have used, or implicitly assumed, for their counterfactuals. Since all the studies use post-OCP data to estimate the effect of children on saving, the implicit assumption is that the relationship between children and saving is the same with and without the OCP (thus, no "coefficient effect").

**TABLE 1**  
**What Have Other Studies Used As Counterfactuals for Assessing the Effect of the One-Child Policy?**

| <b>Dependent Variable</b> | <b>Children Variable</b>    | <b>Authors</b>                        | <b>Endowment Effect?</b> | <b>Coefficient Effect?</b> | <b>Counterfactual</b>                                                         |
|---------------------------|-----------------------------|---------------------------------------|--------------------------|----------------------------|-------------------------------------------------------------------------------|
| Saving rate               | No. of children             | Ge, Yang & Zhang (2015)               | Yes                      | No                         | Different age cohorts of Chinese household with more than one child           |
| Saving rate               | No. of children             | Lugauer, Ni, & Yin (2017)             | Yes                      | No                         | Chinese households with more than one child                                   |
| Saving rate               | No. of brothers or siblings | Zhou (2014)                           | Yes                      | No                         | Chinese households with male siblings                                         |
| Saving rate               | No. of children             | Banerjee, Meng, & Qian (2010)         | Yes                      | No                         | Chinese households with more than one child and the first child is a daughter |
| Saving rate               | Dummy for twins             | Choukhmane, Coeurdacier, & Jin (2014) | Yes                      | No                         | Chinese households with twins                                                 |
| Saving rate               | No. of children             | Curtis, Lugauer, & Mark (2015)        | Yes                      | No                         | Chinese households with more than one child                                   |

Ge, Yang, & Zhang (2015) link the number of children to household savings rates by different age cohorts, using provincial-level fines for violating the OCP and the share of ethnic minorities as instruments for the number of children. Across all age cohorts, they find that having one more child decreased saving rates. The estimates varied from a decrease of 3.0-4.5 percentage points for an additional child, to 12.7-18.7 percentage points. Applying these results to the OCP, they concluded that an unanticipated consequence of the OCP was to increase the savings rate. They further concluded that a relaxation of the OCP could serve to stimulate household consumption.

Lugauer, Ni, & Yin (2017) use county-level birth rates after the OCP as an instrument for number of children. They estimate that an additional child is associated with a 5.6 percentage point decrease in household savings. Given a decrease in number of children from 3 to 1, they calculate that the OCP was responsible for an increase of 11 percentage points in the household saving rate.

Some papers have focused on the gender dimension of children, arguing that sons are more reliable than daughters when it comes to financially supporting their parents. Focusing on the effect of male siblings, Zhou (2014) linked the number of brothers an individual has to that individual's saving rate. The idea is that brothers share the financial responsibility of supporting parents. The more brothers, the less the burden on each son to support his parents, and thus the less demand for him to save. Zhou estimated that an additional brother lowers an individual's saving rate by 5 percentage points. Based on this, he concluded that "population policies" were responsible for over one-third of the increase in the saving rate of urban households.

Banerjee, Meng & Qian (2010) examined data on Chinese households with more than one child. They estimate the difference in the effect of an additional child on saving when the first child is a daughter compared to a son. The idea is that if the first child is a daughter, an additional child reduces the need for self-saving for retirement. If the first child is a son, then retirement saving is already "accounted for", and an additional

child will not have much effect on saving for retirement. Their results support the conclusion that the OCP substantially increased savings.

Choukhmane, Coeurdacier, & Jin (2014) develop a quantitative overlapping generation model and calibrate their model using micro-level Chinese data. Assuming that households under the influence of a two-child policy would behave like households with twins under the OCP, they conclude that the OCP can account for 30% to 60% of the rise in aggregate Chinese saving.

Using a similar approach albeit with macro-level data, Curtis, Lugauer, & Mark (2015) built a simulation model to investigate the effect of the OCP on the Chinese saving rate. They conclude that a one-child reduction raised the saving rate by 5.5 percentage points in 1970 and by 4.2 percentage points in 2009.

The studies identified above all estimate a variation of the following, simplified savings function:

$$(1) \quad \text{savings rate} = \alpha + \beta \cdot \text{children} + \text{controls} + \varepsilon$$

The coefficient  $\beta$  is key to estimating the impact of the OCP. If one is willing to make an assumption about the impact of the OCP on the number of children, then the effect of the OCP on the saving rate can be estimated as  $\beta \cdot \Delta \text{children}$ .

A crucial assumption made here is that the OCP did not affect the savings function itself. This is a strong assumption: First, the families who currently have more than one child are unlikely to be representative of families who would have had more than one child without the OCP, as those not following the policy or those allowed not to follow the policy are unlikely to be “average” Chinese.

Second, the OCP could have changed how people spend money on children. That is, the amount of money spent on each child may be very different in an OCP environment versus a multiple child policy environment. In a multiple child policy environment, parents can be more confident that at least one of their children will support them when they are old. If forced to have only one child, such ‘diversification’ is not possible, possibly forcing them to invest more in their one child to ensure that he/she will be financially successful and better able to support them in their old age.

We, therefore, propose a different counterfactual. Rather than comparing Chinese families with different numbers of children (all living in an OCP environment), we compare families in China to families in Taiwan, Hong Kong, Singapore, Malaysia, Japan, and South Korea, places that either have a sizeable Chinese population or have a similar culture to China.

We include Taiwan and Hong Kong because these are closest to China in terms of both culture and demographics. Singapore and Malaysia are included because both have sizeable Chinese populations. Japan and South Korea have similar cultures and share many common values. Both Japan and South Korea also experienced high saving rates during their economic “takeoff” periods. Japan’s national saving rate was greater than 40% in the 1960s and 1970s, and is still relatively high today at 20% to 30%. South Korea’s experience is similar to China’s in that it also experienced a dramatic increase in its saving rate in the 1980s. Today, South Korea’s national saving rate is virtually identical to China’s.

The advantage of our approach is that we allow the savings function to be different for China with its OCP, and for the counterfactuals, where there is no OCP. This enables us to estimate the impact of the OCP both through its effect on the number of children (“endowment effect”) and its effect on how children affect savings (“coefficient effect”).

We readily acknowledge that our counterfactual is imperfect, as our comparison countries differ from China in important ways and we will be able to control only for some of these differences in our analysis below. Nevertheless, given that no perfect counterfactual exists, it is important to analyze whether the use of different, imperfect counterfactuals leads to similar results or not.

### **III. Data**

The data used in this study are from the 2014 Gallup World Poll database and 2014 Global Findex database. The Gallup World Poll database is a yearly survey that includes individual-level data of more than 160 countries worldwide. Data is gathered using face-to-face interviews or telephone surveys. The typical survey includes around 1000

people per country, however, countries with large populations are allocated larger survey samples. In the 2014 Gallup World Poll database, 4696 Chinese individuals were interviewed. The database includes detailed information on individuals' family size, children number, income, ethnicity, employment status, sexual preference, education status, job, etc, information that will be used as control variables in the empirical analysis shown in the following sections.

The Global Findex survey has been done every three years since 2011, in partnership with Gallup. The Global Findex interviews were conducted together with the World Poll survey by Gallup, which means that both surveys can be connected and merged through specific IDs for each individual.

In terms of savings, in the Global Findex survey individuals are asked "In the past 12 months, have you, personally, saved or set aside any money for any reason?", and the respondent has to choose an answer in the following four options, "Yes, No, Don't know, Refuse to answer". Our analysis uses a binary version of this question equaling 1 if the respondent chose Yes, and 0 otherwise (including the small share of respondents that answer don't know or refuse to answer).

While the above question allows us to analyze differences in saving behavior between China and the counterfactuals, it does not measure the saving rate, the share of income saved by the household. As a result, our main research focus is on the likelihood that a person saves as a function of children and other household characteristics, including income.

The survey does have one question that addresses the size of a person's savings. It asks "Now, imagine that you have an emergency and you need to pay the amount of 1/20 of GNI per capita (for example, 5866 RMB, or 838 US dollars for China). How possible is it that you could come up with this amount within the next month? Is it very possible, somewhat possible, not very possible, or not at all possible?"

This is followed by the question "What would be the main source of money that you would use to come up with 1/20 of GNI per capita (5866 RMB, or 838 US dollars) within the next month?", with savings being one of the answer options. For those participants choosing savings as the source of this amount of money, this indicates

that they have a meaningful amount of savings. We use these questions to create a binary variable indicating that the individual has a meaningful amount of savings.

Respondents were also asked about the motives of their savings, specifically, “In the past 12 months, have you, personally saved or set aside any money for any of the following reasons? A: To start, operate, or grow a business or farm. B: For old age. C: For education or school fees.” These questions allow us to separately examine the different reasons of why people save.

Summarizing, while the questions do not allow us to estimate the share of income going to savings, the questions do allow us to measure how savings patterns in China compare to savings in our counterfactual regions across a variety of dimensions.

The merged 2014 Gallup World Poll and 2014 Global Findex databases contain 146,688 individual observations from 142 countries. Descriptive statistics are shown in TABLES 2 (for saving behavior) and 3 (for number of children).

One finding immediately apparent from these tables is that China is not that different when compared to the counterfactuals. For example, 69% of the participants in China reported having saved in the past 12 months, while the average of the counterfactual respondents is 74% (cf. “All (excl. China)”). Malaysia has the highest percentage, with 83% indicating that they saved. With respect to “Meaningful savings”, 46% of the Chinese sample reported having meaningful savings, compared to 53% for the counterfactuals (cf. “All (excl. China)”).

This pattern is also evident in the various saving motives. Compared to the World average, Chinese people are more likely to save for old age, education, and business. However, counterfactual respondents had the same or higher savings rates. 47% of the counterfactual respondents indicated that they were saving for old age, compared to 40% of Chinese respondents. 33% of counterfactual respondents saved for education, compared to 25% of Chinese respondents. Finally, 15% of both counterfactual and Chinese respondents reported saved for business.

**TABLE 2**  
**Descriptive Statistics for Saving Behavior by Country**

| <b>Saving Variable</b> | <b>Statistic</b> | <b>China</b> | <b>Taiwan</b> | <b>Hong Kong</b> | <b>Japan</b> | <b>Singapore</b> | <b>Malaysia</b> | <b>South Korea</b> | <b>All (excl. China)</b> | <b>World</b> |
|------------------------|------------------|--------------|---------------|------------------|--------------|------------------|-----------------|--------------------|--------------------------|--------------|
| "Save"                 | Obs.             | 4184         | 1000          | 1007             | 1006         | 1000             | 1000            | 1000               | 6013                     | 146688       |
|                        | Mean             | 0.69         | 0.74          | 0.67             | 0.73         | 0.73             | 0.83            | 0.74               | 0.74                     | 0.54         |
|                        | Std. Dev.        | 0.46         | 0.44          | 0.47             | 0.44         | 0.44             | 0.38            | 0.44               | 0.44                     | 0.5          |
|                        | Min              | 0            | 0             | 0                | 0            | 0                | 0               | 0                  | 0                        | 0            |
|                        | Max              | 1            | 1             | 1                | 1            | 1                | 1               | 1                  | 1                        | 1            |
| "Meaningful savings"   | Obs.             | 4184         | 1000          | 1007             | 1006         | 1000             | 1000            | 1000               | 6013                     | 146688       |
|                        | Mean             | 0.46         | 0.5           | 0.59             | 0.77         | 0.52             | 0.33            | 0.45               | 0.53                     | 0.27         |
|                        | Std. Dev.        | 0.5          | 0.5           | 0.49             | 0.41         | 0.5              | 0.47            | 0.5                | 0.5                      | 0.44         |
|                        | Min              | 0            | 0             | 0                | 0            | 0                | 0               | 0                  | 0                        | 0            |
|                        | Max              | 1            | 1             | 1                | 1            | 1                | 1               | 1                  | 1                        | 1            |
| "Saving for old age"   | Obs.             | 4184         | 1000          | 1007             | 1006         | 1000             | 1000            | 1000               | 6013                     | 146688       |
|                        | Mean             | 0.4          | 0.46          | 0.39             | 0.46         | 0.48             | 0.58            | 0.45               | 0.47                     | 0.2          |
|                        | Std. Dev.        | 0.49         | 0.5           | 0.49             | 0.5          | 0.5              | 0.49            | 0.5                | 0.5                      | 0.4          |
|                        | Min              | 0            | 0             | 0                | 0            | 0                | 0               | 0                  | 0                        | 0            |
|                        | Max              | 1            | 1             | 1                | 1            | 1                | 1               | 1                  | 1                        | 1            |

| <b>Saving Variable</b> | <b>Statistic</b> | <b>China</b> | <b>Taiwan</b> | <b>Hong Kong</b> | <b>Japan</b> | <b>Singapore</b> | <b>Malaysia</b> | <b>South Korea</b> | <b>All (excl. China)</b> | <b>World</b> |
|------------------------|------------------|--------------|---------------|------------------|--------------|------------------|-----------------|--------------------|--------------------------|--------------|
| “Saving for education” | Obs.             | 4184         | 1000          | 1007             | 1006         | 1000             | 1000            | 1000               | 6013                     | 146688       |
|                        | Mean             | 0.25         | 0.35          | 0.27             | 0.25         | 0.32             | 0.51            | 0.3                | 0.33                     | 0.19         |
|                        | Std. Dev.        | 0.43         | 0.48          | 0.44             | 0.43         | 0.47             | 0.5             | 0.46               | 0.47                     | 0.39         |
|                        | Min              | 0            | 0             | 0                | 0            | 0                | 0               | 0                  | 0                        | 0            |
|                        | Max              | 1            | 1             | 1                | 1            | 1                | 1               | 1                  | 1                        | 1            |
| “Saving for business”  | Obs.             | 4184         | 1000          | 1007             | 1006         | 1000             | 1000            | 1000               | 6013                     | 146688       |
|                        | Mean             | 0.15         | 0.19          | 0.09             | 0.04         | 0.11             | 0.2             | 0.27               | 0.15                     | 0.12         |
|                        | Std. Dev.        | 0.35         | 0.39          | 0.29             | 0.2          | 0.31             | 0.39            | 0.44               | 0.36                     | 0.39         |
|                        | Min              | 0            | 0             | 0                | 0            | 0                | 0               | 0                  | 0                        | 0            |
|                        | Max              | 1            | 1             | 1                | 1            | 1                | 1               | 1                  | 1                        | 1            |

SOURCE: Authors’ calculations based on the Gallup World Poll and Global Findex database.

**TABLE 3**  
**Descriptive Statistics for Number of Children in the Household by Country**

| <b>Statistic</b> | <b>China</b> | <b>Taiwan</b> | <b>Hong Kong</b> | <b>Japan</b> | <b>Singapore</b> | <b>Malaysia</b> | <b>South Korea</b> | <b>All (excl. China)</b> | <b>World</b> |
|------------------|--------------|---------------|------------------|--------------|------------------|-----------------|--------------------|--------------------------|--------------|
| Obs.             | 4184         | 1000          | 1007             | 1006         | 1000             | 1000            | 1000               | 6013                     | 142504       |
| Mean             | 0.56         | 0.55          | 0.44             | 0.41         | 0.44             | 1.49            | 0.31               | 0.61                     | 1.2          |
| Std. Dev.        | 0.84         | 0.93          | 0.8              | 0.83         | 0.79             | 1.9             | 0.7                | 1.14                     | 1.69         |
| Min              | 0            | 0             | 0                | 0            | 0                | 0               | 0                  | 0                        | 0            |
| Max              | 8            | 6             | 6                | 4            | 5                | 30              | 5                  | 30                       | 34           |

SOURCE: Authors' calculations based on the Gallup World Poll and Global Findex database

These survey findings may seem counter-intuitive. However, macro-level data from the counterfactual regions indicate that they also have high national saving rates. Singapore's gross saving rate was 48% in 2017, compared to 46% for China. The corresponding rates for Taiwan, Hong Kong, Japan, Malaysia, and South Korea are 34%, 27%, 25%, 30%, and 35% (OECD National Account data, 2017).

Similarities between China and the counterfactual regions are also evident with respect to number of children (cf. TABLE 3). The average number of children per household in China is 0.56, compared to 0.61 for the counterfactuals (cf. "All (excl. China)"). Malaysia is a noteworthy outlier with 1.49 children per household. These numbers reflect low fertility rates in the macro-level data. The average number of children born to a woman over her lifetime in China is 1.63. This compares with 1.12 for Hong Kong, 1.16 for Singapore, 1.43 for Japan, 1.89 for South Korea and 2.02 for Malaysia.

TABLE 10 in the Appendix reports descriptive statistics and definitions for the other variables used in our analysis. While there are many similarities, there are also notable differences. Chinese respondents have less income, are less likely to live in an urban area, have less education, and are more likely to be married compared to the counterfactuals.

#### IV. METHODOLOGY

The starting point of our analysis is a linear savings function similar to those commonly employed in the literature. To understand how the OCP affects saving behavior, we should evaluate both the effect that number of children has on saving behavior (the "endowment effect") and the effect of each child ("the coefficient effect"). Blinder-Oaxaca decomposition (Blinder, 1973; Oaxaca, 1973; Jann, 2008) enables us to decompose the total difference in saving behavior into these components, while also controlling for the effect of other variables that affect saving behavior.

The general specification of our savings function is given by

$$(2) \quad \textit{Saving Decision} = \alpha + \beta \cdot \textit{Children} + \textit{Controls} + \varepsilon$$

where *Saving Decision* is a dummy variable taking the value 1 if the respondent had saved in the past 12 months, *Children* is number of children in the respondent's household, and *Controls* includes a wide variety of individual and household characteristics including income, gender, age, and education.

Blinder-Oaxaca decomposition is designed to decompose differences between two groups. It divides the outcome variable into a component associated with group differences in the sample means of the explanatory variables, and another component associated with group differences in the variable coefficients.

Let the difference between the means of a given outcome variable  $Y$  for two groups  $A$  and  $B$  be represented by  $\Delta$ :

$$(3) \quad \Delta = E(Y_A) - E(Y_B).$$

Further, let  $Y$  for each of the groups be a function of explanatory variables  $X$  according to the following linear models,

$$(4) \quad \begin{aligned} Y_{Ai} &= X_{Ai}'\beta_A + \varepsilon_{Ai}, \quad E(\varepsilon_A) = 0 \\ Y_{Bi} &= X_{Bi}'\beta_B + \varepsilon_{Bi}, \quad E(\varepsilon_B) = 0 \end{aligned}$$

where  $X$  is a vector of variables including a constant term,  $\beta$  is the associated vector of coefficients, and  $\varepsilon$  is the error term.

It follows that the difference in the means of the outcome variable for the two groups can be expressed as:

$$(5) \quad \Delta = E(Y_A) - E(Y_B) = E(X_A)'\beta_A - E(X_B)'\beta_B.$$

By adding and subtracting terms, we represent this difference by a threefold decomposition:

$$(6) \quad \Delta = [E(X_A) - E(X_B)]'\beta_B + E(X_B)'(\beta_A - \beta_B) + [E(X_A) - E(X_B)]'(\beta_A - \beta_B).$$

The first term on the right-hand side,  $[E(X_A) - E(X_B)]'\beta_B$  is the component due to the difference in the means of the explanatory variables evaluated at the coefficients for group  $B$ . This is the “endowment effect”. The second term,  $E(X_B)'(\beta_A - \beta_B)$  is the component due to the difference in the coefficients across the two groups evaluated at the sample means for group  $B$ . This is the “coefficient effect”. The third term,

$[E(X_A) - E(X_B)]'(\beta_A - \beta_B)$  is an interaction term that collects the remainder of the difference as the simultaneous difference of both means and coefficients of the two groups.

We use this decomposition method to analyze the difference in saving behavior between China and its counterfactuals, focusing specifically on the effect of children.

## V. EMPIRICAL RESULTS

TABLE 4 reports the results of estimating Equation (2) using OLS for each of the countries (China, Taiwan, Hong Kong, Japan, Singapore, Malaysia, and South Korea). The dependent variable is “Saving”, which For China, we find a negative relation between number of children and the decision to save. An additional child in China is associated with a 3 percentage-point reduction in the probability that an individual has saved in the past 12 months. If we were to apply this estimate as other studies have done in the literature with respect to the OCP, we would interpret it as implying that a reduction in the number of dependent children would increase the probability of saving by 6 percentage points.

The negative relationship between children and the probability of saving is not evident in the saving behavior of the counterfactual regions. The associated estimated coefficients are either positive or very close to zero for these regions. This provides some support for the view that the effect of children on saving is different for China. However, the coefficients for both China and the counterfactual regions are quantitatively small. This suggests that the difference in the estimated effects of children on saving will only be able to explain a small amount of the total difference in saving behavior.

TABLE 5 focuses on the effect of children on individual saving behavior. It decomposes the overall difference in the probability of saving into the three components (“Endowments”, “Coefficients”, and “Interaction”). The first two rows report the unconditional difference in the probability of saving for a Chinese respondent

compared to a respondent from the respective counterfactual region. The third row reports the difference, with positive (negative) numbers indicating that the probability is larger (smaller) for Chinese respondents.

The next four rows apply the Blinder-Oaxaca decomposition to the overall difference. “TOTAL” estimates the total difference in saving behavior between Chinese respondents and their counterfactuals that is attributed to children. The three rows above that break that total into the individual “Endowment”, “Coefficient”, and “Interaction” components, where the sum of these equal to “TOTAL”. In all cases, the reference group is China.

The “Endowment” component identifies how much counterfactuals’ probabilities of saving would change if counterfactual respondents had the same number of children, on average, as Chinese respondents. For example, the “Endowment” component for Hong Kong is 0.003. This indicates that the percentage of Hong Kong respondents who save would increase by 0.3 percentage points if Hong Kong households had the same number of children, on average, as Chinese households. This is a very small effect. We find similar small effects when we use other regions as counterfactuals.

The “Coefficient” component quantifies the change in the predicted percentage of counterfactuals who would save if their relationship between children and saving was the same as China’s, as represented by the estimated coefficient on the number of children in China’s savings function.

Overall, the coefficient effect is larger in absolute value than the endowment effect. The largest coefficient effect we estimate (in absolute value) is -0.048, for Malaysia. This indicates that the percentage of Malaysia’s respondents who save would be 4.8 percentage points less if Malaysians saving behavior was governed by China’s savings function. When we estimate a pooled saving function for all the counterfactual regions, the associated children’s coefficient leads to a coefficient effect of only -0.26 percentage points.

Across all counterfactual regions, we estimate coefficient effects ranging from -0.5 percentage points (South Korea) to -4.8 percentage points (Malaysia). This indicates that children have a stronger, negative effect on savings in China. This helps explain why counterfactuals tend to have a higher share of people who were able to save in the past 12 months, though the effect is small.

Finally, the “Interaction” component measures the simultaneous effect of differences in endowments and coefficients. Similar to the endowment and coefficient effects, we find the interaction effect for the number of children variable to be small whatever counterfactual we use.

By comparing the “TOTAL” and “DIFFERENCE” rows in TABLE 5, we see that the children variable can explain a sizeable portion of the overall difference between China and the counterfactuals in the percentage of people that save. For example, when we pool all the counterfactuals (cf. “All (excl. China)”), about half of the difference between this pooled counterfactual and China can be explained by the number of children (compare -0.025 with -0.054). More precisely, since the interaction and endowment effects are very small, most of the overall effect of children can be explained by the higher negative impact of children on savings in China (that is, the coefficient effect).

Although the children variable can explain a sizeable share of the difference in the percentage of people that save between China and the counterfactuals, the overall impact is still small. Indeed the combined effect we get for children ranges from -1.2 percentage points for South Korea to -4.1 percentage points for Japan. This, combined with the overall small difference in saving behavior between China and the counterfactual regions, suggests that the OCP has not had a substantial impact on Chinese saving behavior.

**TABLE 4**  
**Determinants of “Save”: China and Counterfactuals**

| Variable           | China                | Taiwan              | Hong Kong           | Japan               | Singapore           | Malaysia            | South Korea          | All<br>(excl. China) |
|--------------------|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|----------------------|
| <b>childnum</b>    | -0.030***<br>(0.009) | 0.013<br>(0.015)    | 0.023<br>(0.018)    | 0.056***<br>(0.017) | 0.040**<br>(0.018)  | 0.002<br>(0.006)    | -0.013<br>(0.018)    | 0.008*<br>(0.005)    |
| <b>businessown</b> | 0.077***<br>(0.019)  | 0.122***<br>(0.035) | 0.004<br>(0.045)    | 0.002<br>(0.044)    | 0.173***<br>(0.042) | 0.042<br>(0.027)    | 0.045<br>(0.031)     | 0.062***<br>(0.015)  |
| <b>income</b>      | 0.000*<br>(0.000)    | 0.000<br>(0.000)    | 0.000**<br>(0.000)  | 0.000***<br>(0.000) | 0.000*<br>(0.000)   | 0.000**<br>(0.000)  | 0.000***<br>(0.000)  | 0.000**<br>(0.000)   |
| <b>gender</b>      | 0.064***<br>(0.014)  | -0.002<br>(0.026)   | 0.033<br>(0.028)    | -0.040<br>(0.030)   | 0.026<br>(0.028)    | -0.046*<br>(0.023)  | 0.006<br>(0.027)     | -0.003<br>(0.011)    |
| <b>age</b>         | 0.003<br>(0.002)     | -0.007<br>(0.005)   | -0.002<br>(0.005)   | 0.008<br>(0.006)    | 0.002<br>(0.005)    | 0.001<br>(0.004)    | 0.012**<br>(0.005)   | 0.000<br>(0.002)     |
| <b>agesq</b>       | -0.000***<br>(0.000) | 0.000<br>(0.000)    | -0.000<br>(0.000)   | -0.000<br>(0.000)   | -0.000<br>(0.000)   | -0.000<br>(0.000)   | -0.000***<br>(0.000) | -0.000**<br>(0.000)  |
| <b>help</b>        | 0.163***<br>(0.019)  | 0.140***<br>(0.026) | 0.120***<br>(0.029) | 0.036<br>(0.039)    | 0.075**<br>(0.037)  | 0.101***<br>(0.023) | 0.088***<br>(0.025)  | 0.105***<br>(0.012)  |
| <b>urban</b>       | 0.083***<br>(0.018)  | -0.058**<br>(0.027) | 0.036<br>(0.055)    | 0.017<br>(0.028)    | ----                | 0.028<br>(0.024)    | -0.023<br>(0.041)    | -0.008<br>(0.014)    |
| <b>sector</b>      | 0.006<br>(0.014)     | 0.056**<br>(0.026)  | 0.004<br>(0.028)    | -0.012<br>(0.037)   | 0.048*<br>(0.029)   | -0.011<br>(0.026)   | -0.023<br>(0.025)    | 0.014<br>(0.011)     |
| <b>food</b>        | 0.015<br>(0.028)     | 0.169***<br>(0.043) | 0.175***<br>(0.061) | 0.183**<br>(0.072)  | 0.327***<br>(0.090) | 0.079**<br>(0.033)  | 0.128***<br>(0.037)  | 0.151***<br>(0.019)  |

| Variable                 | China               | Taiwan              | Hong Kong           | Japan               | Singapore           | Malaysia            | South Korea         | All<br>(excl. China) |
|--------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| <b>shelter</b>           | 0.069***<br>(0.022) | -0.058<br>(0.045)   | 0.013<br>(0.049)    | 0.035<br>(0.071)    | -0.107<br>(0.112)   | 0.019<br>(0.029)    | 0.063**<br>(0.031)  | 0.022<br>(0.017)     |
| <b>receivemoney</b>      | -0.002<br>(0.022)   | -0.053<br>(0.085)   | 0.020<br>(0.041)    | 0.076<br>(0.067)    | 0.007<br>(0.044)    | -0.008<br>(0.030)   | 0.004<br>(0.038)    | 0.003<br>(0.018)     |
| <b>secondary</b>         | 0.102***<br>(0.017) | 0.165***<br>(0.048) | 0.138***<br>(0.048) | 0.177***<br>(0.050) | 0.129***<br>(0.044) | 0.118***<br>(0.042) | 0.127**<br>(0.052)  | 0.158***<br>(0.019)  |
| <b>college</b>           | 0.112***<br>(0.028) | 0.270***<br>(0.050) | 0.273***<br>(0.052) | 0.239***<br>(0.054) | 0.107**<br>(0.052)  | 0.161***<br>(0.044) | 0.179***<br>(0.058) | 0.225***<br>(0.021)  |
| <b>married</b>           | 0.102***<br>(0.021) | 0.021<br>(0.040)    | 0.007<br>(0.036)    | 0.109***<br>(0.033) | -0.007<br>(0.036)   | 0.009<br>(0.031)    | 0.103***<br>(0.038) | 0.040***<br>(0.014)  |
| <b>borrowed</b>          | 0.021<br>(0.015)    | 0.006<br>(0.028)    | 0.023<br>(0.030)    | 0.023<br>(0.034)    | 0.113***<br>(0.031) | 0.100***<br>(0.026) | 0.057**<br>(0.025)  | 0.052***<br>(0.012)  |
| <b>welfare</b>           | 0.031<br>(0.020)    | 0.031<br>(0.042)    | 0.022<br>(0.039)    | -0.002<br>(0.040)   | 0.030<br>(0.031)    | 0.018<br>(0.025)    | 0.011<br>(0.034)    | 0.019<br>(0.014)     |
| <b>_cons</b>             | 0.412***<br>(0.062) | 0.638***<br>(0.106) | 0.433***<br>(0.136) | 0.074<br>(0.166)    | 0.313**<br>(0.125)  | 0.542***<br>(0.093) | 0.116<br>(0.119)    | 0.397***<br>(0.047)  |
| <b>Obs.</b>              | 4184                | 1000                | 1007                | 1006                | 1000                | 1000                | 1000                | 6013                 |
| <b>R-squared</b>         | 0.085               | 0.166               | 0.192               | 0.120               | 0.095               | 0.109               | 0.220               | 0.124                |
| <b>Controls</b>          | YES                 | YES                 | YES                 | YES                 | YES                 | YES                 | YES                 | YES                  |
| <b>Country<br/>Dummy</b> | NO                  | NO                  | NO                  | NO                  | NO                  | NO                  | NO                  | YES                  |

NOTE: Standard errors are in parentheses. \*\*\* p<.01, \*\* p<.05, \* p<.1

**TABLE 5**  
**DECOMPOSITION RESULTS: “SAVE/CHILDREN”**

|                                                     | Taiwan               | Hong Kong            | Japan                | Singapore            | Malaysia             | South Korea          | All<br>(excl. China) |
|-----------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “SAVE”</b>                  |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                        | 0.686                | 0.686                | 0.686                | 0.686                | 0.686                | 0.686                | 0.686                |
| <b>Counterfactual</b>                               | 0.743                | 0.670                | 0.732                | 0.730                | 0.828                | 0.743                | 0.741                |
| <b><i>DIFFERENCE</i></b>                            | <b><i>-0.057</i></b> | <b><i>0.016</i></b>  | <b><i>-0.045</i></b> | <b><i>-0.044</i></b> | <b><i>-0.142</i></b> | <b><i>-0.057</i></b> | <b><i>-0.054</i></b> |
| <b>DECOMPOSITION – EFFECT OF CHILDREN ON “SAVE”</b> |                      |                      |                      |                      |                      |                      |                      |
| <b>Endowments</b>                                   | 0.000                | 0.003                | 0.008***             | 0.005*               | -0.002               | -0.003               | -0.001*              |
| <b>Coefficients</b>                                 | -0.024**             | -0.024***            | -0.036***            | -0.031***            | -0.048***            | -0.005               | -0.026***            |
| <b>Interaction</b>                                  | 0.000                | -0.007**             | -0.013***            | -0.008***            | 0.03**               | -0.004               | 0.002**              |
| <b><i>TOTAL</i></b>                                 | <b><i>-0.024</i></b> | <b><i>-0.028</i></b> | <b><i>-0.041</i></b> | <b><i>-0.034</i></b> | <b><i>-0.020</i></b> | <b><i>-0.012</i></b> | <b><i>-0.025</i></b> |
| <b>Observations</b>                                 |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                        | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 |
| <b>Counterfactual</b>                               | 1000                 | 1007                 | 1006                 | 1000                 | 1000                 | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.1 Complete decomposition result shown in TABLE 11 in the Appendix.

So far we focused on the decision to save or not. Next, we focus on having “meaningful savings”, as this is likely to be more closely associated with the saving rate. TABLE 6 shows the decomposition result for this outcome variable. Based on the estimates from the respective saving functions, we find that the endowment, coefficient, and interaction effects are all small. Overall children seem to play an even smaller role in explaining differences in “meaningful savings” than for savings in general.

Next, we focus on the specific reasons to save. TABLES 7-9 show the decomposition results for people’s decision to save for old age, education, and business respectively.

TABLE 7 focuses on the decision to save for old age. Children are sometimes viewed as a source of old-age support, as one possible motive to raise children is to provide parents financial support when they get older. The OCP could push people to save more for their old age because they have fewer children to rely on. Our decomposition results offer little evidence for this.

The endowment effects we estimate are close to zero across all counterfactual regions. For example, the percentage of people who save for old age in the pooled counterfactuals sample (“All (exc. China)”) would decrease by only 0.1 percentage points if respondents in the counterfactual regions had the same number of children, on average, as Chinese respondents.

Similarly, we find that the coefficient effect is mostly negative. This suggests that the percentage of counterfactual respondents saving for old age would be lower if their saving behavior was governed by China’s savings function. While the coefficient effect can explain a sizeable part of the (relatively small) difference in the percentage of people saving for old age, the effect is again small in absolute value.

**TABLE 6**  
**DECOMPOSITION RESULTS: “MEANINGFUL SAVINGS/CHILDREN”**

|                                                                   | Taiwan               | Hong Kong            | Japan                | Singapore            | Malaysia             | South Korea          | All<br>(excl. China) |
|-------------------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “MEANINGFUL SAVINGS”</b>                  |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                                      | 0.46                 | 0.46                 | 0.46                 | 0.46                 | 0.46                 | 0.46                 | 0.46                 |
| <b>Counterfactual</b>                                             | 0.505                | 0.59                 | 0.772                | 0.523                | 0.33                 | 0.451                | 0.529                |
| <b><i>DIFFERENCE</i></b>                                          | <b><i>-0.044</i></b> | <b><i>0.13</i></b>   | <b><i>-0.312</i></b> | <b><i>-0.063</i></b> | <b><i>0.13</i></b>   | <b><i>-0.009</i></b> | <b><i>-0.069</i></b> |
| <b>DECOMPOSITION – EFFECT OF CHILDREN ON “MEANINGFUL SAVINGS”</b> |                      |                      |                      |                      |                      |                      |                      |
| <b>Endowments</b>                                                 | 0.000                | 0.001                | 0.003                | 0.005*               | 0.003                | -0.002               | -0.000               |
| <b>Coefficients</b>                                               | -0.023**             | -0.013               | -0.016**             | -0.027***            | -0.021               | -0.003               | -0.007               |
| <b>Interaction</b>                                                | -0.001               | -0.036               | -0.006*              | -0.007**             | 0.013                | -0.003               | 0.000                |
| <b><i>TOTAL</i></b>                                               | <b><i>-0.024</i></b> | <b><i>-0.048</i></b> | <b><i>-0.019</i></b> | <b><i>-0.029</i></b> | <b><i>-0.005</i></b> | <b><i>-0.008</i></b> | <b><i>-0.007</i></b> |
| <b>Observations</b>                                               |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                                      | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 |
| <b>Counterfactual</b>                                             | 1000                 | 1007                 | 1006                 | 1000                 | 1000                 | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.1 Complete decomposition result shown in TABLE 12 in the Appendix.

**TABLE 7**  
**DECOMPOSITION RESULTS: “SAVING FOR OLD AGE/CHILDREN”**

|                                                                   | Taiwan               | Hong Kong            | Japan                | Singapore            | Malaysia             | South Korea          | All<br>(excl. China) |
|-------------------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “SAVING FOR OLD AGE”</b>                  |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                                      | 0.397                | 0.397                | 0.397                | 0.397                | 0.397                | 0.397                | 0.397                |
| <b>Counterfactual</b>                                             | 0.457                | 0.387                | 0.462                | 0.485                | 0.58                 | 0.449                | 0.47                 |
| <b><i>DIFFERENCE</i></b>                                          | <b><i>-0.059</i></b> | <b><i>0.01</i></b>   | <b><i>-0.065</i></b> | <b><i>-0.087</i></b> | <b><i>-0.182</i></b> | <b><i>-0.051</i></b> | <b><i>-0.072</i></b> |
| <b>DECOMPOSITION – EFFECT OF CHILDREN ON “SAVING FOR OLD AGE”</b> |                      |                      |                      |                      |                      |                      |                      |
| <b>Endowments</b>                                                 | 0.000                | 0.001                | -0.003               | 0.002                | -0.006               | 0.001*               | -0.001*              |
| <b>Coefficients</b>                                               | -0.032***            | -0.02**              | -0.007               | -0.025**             | -0.067***            | -0.024**             | -0.034***            |
| <b>Interaction</b>                                                | -0.001               | -0.006*              | -0.002               | -0.007**             | 0.041***             | -0.02***             | 0.002**              |
| <b><i>TOTAL</i></b>                                               | <b><i>-0.033</i></b> | <b><i>-0.025</i></b> | <b><i>-0.012</i></b> | <b><i>-0.03</i></b>  | <b><i>-0.032</i></b> | <b><i>-0.043</i></b> | <b><i>-0.033</i></b> |
| <b>Observations</b>                                               |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                                      | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 |
| <b>Counterfactual</b>                                             | 1000                 | 1007                 | 1006                 | 1000                 | 1000                 | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.1 Complete decomposition result shown in TABLE 13 in the Appendix.

**TABLE 8**  
**DECOMPOSITION RESULTS: “SAVING FOR EDUCATION/CHILDREN”**

|                                                                     | Taiwan               | Hong Kong            | Japan                | Singapore            | Malaysia             | South Korea          | All<br>(excl. China) |
|---------------------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “SAVING FOR EDUCATION”</b>                  |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                                        | 0.253                | 0.253                | 0.253                | 0.253                | 0.253                | 0.253                | 0.253                |
| <b>Counterfactual</b>                                               | 0.354                | 0.268                | 0.247                | 0.323                | 0.506                | 0.299                | 0.332                |
| <b><i>DIFFERENCE</i></b>                                            | <b><i>-0.101</i></b> | <b><i>-0.015</i></b> | <b><i>0.007</i></b>  | <b><i>-0.07</i></b>  | <b><i>-0.253</i></b> | <b><i>-0.046</i></b> | <b><i>-0.08</i></b>  |
| <b>DECOMPOSITION – EFFECT OF CHILDREN ON “SAVING FOR EDUCATION”</b> |                      |                      |                      |                      |                      |                      |                      |
| <b>Endowments</b>                                                   | 0.000                | 0.008***             | 0.026***             | 0.017***             | -0.040***            | 0.028***             | -0.003**             |
| <b>Coefficients</b>                                                 | 0.016                | -0.004               | -0.05***             | -0.038***            | 0.016                | -0.018**             | -0.009               |
| <b>Interaction</b>                                                  | 0.000                | -0.001               | -0.018***            | -0.011***            | -0.001               | -0.015**             | 0.001                |
| <b><i>TOTAL</i></b>                                                 | <b><i>0.016</i></b>  | <b><i>0.003</i></b>  | <b><i>-0.042</i></b> | <b><i>-0.032</i></b> | <b><i>-0.025</i></b> | <b><i>-0.005</i></b> | <b><i>-0.011</i></b> |
| <b>Observations</b>                                                 |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                                        | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 |
| <b>Counterfactual</b>                                               | 1000                 | 1007                 | 1006                 | 1000                 | 1000                 | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.1 Complete decomposition result shown in TABLE 14 in the Appendix.

**TABLE 9**  
**DECOMPOSITION RESULTS: “SAVING FOR BUSINESS/CHILDREN”**

|                                                                    | Taiwan               | Hong Kong            | Japan                | Singapore            | Malaysia             | South Korea          | All<br>(excl. China) |
|--------------------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “SAVING FOR BUSINESS”</b>                  |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                                       | 0.147                | 0.147                | 0.147                | 0.147                | 0.147                | 0.147                | 0.147                |
| <b>Counterfactual</b>                                              | 0.192                | 0.093                | 0.043                | 0.113                | 0.196                | 0.266                | 0.15                 |
| <b><i>DIFFERENCE</i></b>                                           | <b><i>-0.045</i></b> | <b><i>0.054</i></b>  | <b><i>0.104</i></b>  | <b><i>0.034</i></b>  | <b><i>-0.049</i></b> | <b><i>-0.119</i></b> | <b><i>-0.003</i></b> |
| <b>DECOMPOSITION – EFFECT OF CHILDREN ON “SAVING FOR BUSINESS”</b> |                      |                      |                      |                      |                      |                      |                      |
| <b>Endowments</b>                                                  | 0.001                | 0.001                | 0.005***             | 0.001                | 0.001                | -0.000               | -0.000               |
| <b>Coefficients</b>                                                | -0.028***            | -0.005               | -0.018***            | -0.008               | -0.01                | -0.002               | -0.006               |
| <b>Interaction</b>                                                 | -0.001               | -0.002               | -0.006***            | -0.002               | 0.006                | -0.002               | 0.000                |
| <b><i>TOTAL</i></b>                                                | <b><i>-0.028</i></b> | <b><i>-0.006</i></b> | <b><i>-0.019</i></b> | <b><i>-0.009</i></b> | <b><i>-0.003</i></b> | <b><i>-0.004</i></b> | <b><i>-0.006</i></b> |
| <b>Observations</b>                                                |                      |                      |                      |                      |                      |                      |                      |
| <b>China</b>                                                       | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 |
| <b>Counterfactual</b>                                              | 1000                 | 1007                 | 1006                 | 1000                 | 1000                 | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.1 Complete decomposition result shown in TABLE 15 in the Appendix.

TABLE 8 reports decomposition results for people's decision to save for education. Education is one of the largest expenditures in raising a child. Further, with fewer children, Chinese families may invest more in education so that their one child will be better able to support them in their old age. As a result, one could expect the OCP to have a substantial impact on respondents' decision to save for education.

Once again, however, comparison of the saving behavior of the Chinese and counterfactual respondents does not identify major differences (except for Malaysia). When we decompose the overall difference associated with the effect of children, the absolute sizes of the overall differences are insubstantial, ranging from -0.5 to 1.6 percentage points. Even in Malaysia, where the overall difference is relatively large, the total effect of children is small.

TABLE 9 reports our final decomposition results, for the decision to save for business. We expect that the decision to save for business would be largely unaffected by number of children and the results are consistent with this. All three of the components are close to 0 for each of the counterfactual regions.

In conclusion, our results indicate that the OCP is not a likely candidate to explain China's high saving rate. At the micro-level, respondents' saving behavior in China is little different from their behavior in related regions that do not have restrictive population policies. Further, when we focus specifically on the effect of number of children on saving, we find that the sizes of the associated effects are small.

## VI. CONCLUSION

China's high saving rate has been a longstanding puzzle for researchers. One of the most prominent explanations for this puzzle relates China's saving rate to the One-Child Policy (OCP), introduced in 1979. With fewer children to support them in their old age, it is hypothesized that parents responded by increasing their saving to finance retirement. This explanation has much appeal, especially since the increase in China's saving rate occurred about the same time as the implementation of the OCP. In addition, several studies report a substantial negative relationship between savings and children, consistent with the OCP hypothesis.

However, a closer examination raises doubts. Not all studies find substantial effects of children on savings. Many other reforms were happening in China during the heady reform period of the early 1980s. And previous studies finding a relationship between children and saving have based their analysis on household data during the period the OCP was in place. As a result, these studies implicitly assume a "counterfactual" for China's OCP that relies on the saving behavior of households living within an OCP environment.

Our study makes two methodological innovations in examining the OCP hypothesis. First, we employ a different counterfactual to understand the effect of the OCP. We compare the saving behavior of Chinese people with the saving behavior of people from other Asian regions that share cultural and demographic characteristics (Taiwan, Hong Kong, Japan, Singapore, Malaysia, and South Korea). We are able to do this by combining data from two sources: the Gallup World Poll and the Global Findex database. These micro-datasets allow us to match a large number of personal characteristics with saving behavior.

Second, we use the Blinder-Oaxaca decomposition procedure to separate the "endowment" from the "coefficient" effect of children on saving. This is of interest because the OCP could affect saving directly, by restricting the number of children households have (the "endowment effect"); or indirectly, by changing the nature of the empirical relationship between children and saving (the "coefficient effect").

Previous studies have been forced to assume that the empirical relationship between children and saving is the same for households living with and without the OCP. They had to assume this because the only data they had was for households living with the OCP. In contrast, we allow the empirical relationship between children and saving to differ between China and countries that do not have restrictive population policies.

Our main empirical finding is there is little substantive difference in the saving behavior of Chinese people compared to the saving behavior of those living in our “counterfactual” regions. This suggests that the OCP is not a compelling explanation for China’s high saving rate. Further, while a Blinder-Oaxaca decomposition indicates that children can explain some of the differences between Chinese and counterfactual people, the effects are too small to support a major role for children as a determinant of saving behavior.

Our findings are important for understanding current debates about how China can switch from an investment-based to a consumption-based economy. Some researchers have suggested that the relaxation of China’s OCP can be expected to boost Chinese consumption. Our results do not support this.

## REFERENCES

- 2008 年国务院常务会议汇总 (2008). Summary of the 2008 executive meeting of the state council. *Chinese Government Website*. Retrieved from [http://www.gov.cn/jrzg/2008-12/09/content\\_1192649.htm](http://www.gov.cn/jrzg/2008-12/09/content_1192649.htm)
- Banerjee, A., Meng, X., & Qian, N. (2010). The life cycle model and household savings: Micro evidence from urban China. *National Bureau of Demographic Dividends Revisited*, 21.
- Binkaia, C., & Rudaib, Y. (2013). Land Supply, Housing Price and Household Saving in Urban China: Evidence from Urban Household Survey [J]. *Economic Research Journal*, 1.
- Blinder, A. S. (1973). Wage discrimination: reduced form and structural estimates. *Journal of Human resources*, 8(4), 436-455.
- CEIC Data. (2019). China Investment: % of GDP [1952 - 2019] [Data & Charts]. Retrieved from <https://www.ceicdata.com/en/indicator/china/investment--nominal-gdp>
- Chamon, M. D., & Prasad, E. S. (2010). Why are saving rates of urban households in China rising?. *American Economic Journal: Macroeconomics*, 2(1), 93-130.
- Chamon, M., & Prasad, E. (2005). Determinants of household saving in China. *Photocopy. International Monetary Fund, Washington, DC*.
- Chamon, M., Liu, K., & Prasad, E. (2013). Income uncertainty and household savings in China. *Journal of Development Economics*, 105, 164-177.
- Choukhmane, T., Coeurdacier, N., & Jin, K. (2013). The one-child policy and household savings. *CEPR Discussion Paper No. DP9688*
- Curtis, C. C., Lugauer, S., & Mark, N. C. (2015). Demographic patterns and household saving in China. *American Economic Journal: Macroeconomics*, 7(2), 58-94.
- Feng, J., He, L., & Sato, H. (2011). Public pension and household saving: Evidence from urban China. *Journal of Comparative Economics*, 39(4), 470-485.
- Ge, S., Yang, D. T., & Zhang, J. (2012). Population policies, demographic structural changes, and the Chinese household saving puzzle. *Institute for the Study of Labor (IZA) Discussion Paper*, 7026.
- International Monetary Fund. (2016). The People's Republic of China: Selected Issues. *IMF Staff Country Reports*, 16(271), 1. doi: 10.5089/9781475524383.002
- Jann, B. (2008). The Blinder–Oaxaca decomposition for linear regression models. *The Stata Journal*, 8(4), 453-479.
- Lardy, N. R. (2016). China: Toward a consumption-driven growth path. In *Seeking Changes: The Economic Development in Contemporary China* (pp. 85-111).

Li, S., Whalley, J., & Zhao, X. (2013). Housing price and household savings rates: evidence from China. *Journal of Chinese Economic and Business Studies*, 11(3), 197-217.

Lugauer, S., Ni, J., & Yin, Z. (2017). Chinese household saving and dependent children: Theory and evidence. *China Economic Review*.

National Bureau of Statistics of China. (1955-2015). Household savings rate. *The Chinese statistical yearbook*.

Oaxaca, R. (1973). Male-female wage differentials in urban labor markets. *International economic review*, 693-709.

OECD Data. (2019) Household accounts - Household savings. Retrieved from <https://data.oecd.org/hha/household-savings.htm>

OECD Data. (2019) National income - Saving rate. Retrieved from <https://data.oecd.org/natincome/saving-rate.htm>

Wang, X., & Wen, Y. (2012). Housing prices and the high Chinese saving rate puzzle. *China Economic Review*, 23(2), 265-283.

Wei, S. J., & Zhang, X. (2011). The competitive saving motive: Evidence from rising sex ratios and savings rates in China. *Journal of Political Economy*, 119(3), 511-564.

Whyte, M. K., Feng, W., & Cai, Y. (2015). Challenging myths about China's one-child policy. *The China Journal*, (74), 144-159

Wolf, M. (2018). Consumption to replace investment as key to China growth | *Financial Times*. Retrieved from <https://www.ft.com/content/627ab75c-4256-11e8-97ce-ea0c2bf34a0b>

World Bank, World Development Indicators. (2019). Fertility rate, total (births per woman) | Data. Retrieved from <https://data.worldbank.org/indicator/SP.DYN.TFRT.IN?locations=CN>

World Bank, World Development Indicators. (2019). Gross savings (% of GDP) | Data. Retrieved from <https://data.worldbank.org/indicator/NY.GNS.ICTR.ZS>

Zhou, W. (2014). Brothers, household financial markets and savings rate in China. *Journal of Development Economics*, 111, 34-47.

**TABLE 10**  
**Definitions and Descriptive Statistics for Control Variables by Country**

| Statistic                                                                     | China   | Taiwan  | Hong Kong | Japan   | Singapore | Malaysia | South Korea | All (excl. China) | World      |
|-------------------------------------------------------------------------------|---------|---------|-----------|---------|-----------|----------|-------------|-------------------|------------|
| <b><i>businessown: If the person is a business owner: Yes = 1, No = 0</i></b> |         |         |           |         |           |          |             |                   |            |
| Obs.                                                                          | 4,184   | 1,000   | 1,007     | 1,006   | 1,000     | 1,000    | 1,000       | 6,013             | 146,688    |
| Mean                                                                          | 0.69    | 0.74    | 0.67      | 0.73    | 0.73      | 0.83     | 0.74        | 0.74              | 0.54       |
| Std. Dev.                                                                     | 0.46    | 0.44    | 0.47      | 0.44    | 0.44      | 0.38     | 0.44        | 0.44              | 0.5        |
| Min                                                                           | 0       | 0       | 0         | 0       | 0         | 0        | 0           | 0                 | 0          |
| Max                                                                           | 1       | 1       | 1         | 1       | 1         | 1        | 1           | 1                 | 1          |
| <b><i>income: Per capita annual income in international dollars</i></b>       |         |         |           |         |           |          |             |                   |            |
| Obs.                                                                          | 4,184   | 1,000   | 1,007     | 1,006   | 1,000     | 1,000    | 1,000       | 6,013             | 146,688    |
| Mean                                                                          | 6,610   | 15,724  | 28,679    | 18,639  | 14,699    | 10,565   | 15,151      | 17,257            | 8,513      |
| Std. Dev.                                                                     | 16,623  | 16,618  | 82182     | 26,007  | 21,352    | 23719    | 12,767      | 38,952            | 192,653    |
| Min                                                                           | 0       | 0       | 0         | 532     | 0         | 0        | 398         | 0                 | 0          |
| Max                                                                           | 482,814 | 223,496 | 1,958,872 | 532,085 | 376,945   | 376,324  | 132,525     | 1,958,872         | 72,900,000 |
| <b><i>gender: Participant's gender: Male = 1, Female = 0</i></b>              |         |         |           |         |           |          |             |                   |            |
| Obs.                                                                          | 4,184   | 1,000   | 1,007     | 1,006   | 1,000     | 1,000    | 1,000       | 6,013             | 146,688    |
| Mean                                                                          | 0.46    | 0.48    | 0.45      | 0.43    | 0.50      | 0.57     | 0.52        | 0.49              | 0.47       |
| Std. Dev.                                                                     | 0.5     | 0.5     | 0.5       | 0.5     | 0.5       | 0.49     | 0.5         | 0.5               | 0.5        |
| Min                                                                           | 0       | 0       | 0         | 0       | 0         | 0        | 0           | 0                 | 0          |
| Max                                                                           | 1       | 1       | 1         | 1       | 1         | 1        | 1           | 1                 | 1          |

| Statistic                                                                                     | China | Taiwan | Hong Kong | Japan | Singapore | Malaysia | South Korea | All (excl. China) | World   |
|-----------------------------------------------------------------------------------------------|-------|--------|-----------|-------|-----------|----------|-------------|-------------------|---------|
| <b><u>age: Participant's age</u></b>                                                          |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                          | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                          | 47.00 | 43.84  | 45.30     | 56.96 | 41.80     | 36.64    | 50.61       | 45.81             | 41.74   |
| Std. Dev.                                                                                     | 16.95 | 17.12  | 17.94     | 15.87 | 17.03     | 14.02    | 19.71       | 18.13             | 17.88   |
| Min                                                                                           | 15    | 15     | 15        | 15    | 15        | 15       | 15          | 15                | 15      |
| Max                                                                                           | 92    | 95     | 90        | 91    | 90        | 82       | 92          | 95                | 99      |
| <b><u>help: If the household sent financial help to others last year: Yes = 1, No = 0</u></b> |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                          | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                          | 0.15  | 0.41   | 0.29      | 0.14  | 0.16      | 0.30     | 0.35        | 0.28              | 0.22    |
| Std. Dev.                                                                                     | 0.35  | 0.49   | 0.46      | 0.35  | 0.36      | 0.46     | 0.48        | 0.45              | 0.41    |
| Min                                                                                           | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                           | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |
| <b><u>urban: If the participant is from a large city: Yes = 1, No = 0</u></b>                 |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                          | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                          | 0.29  | 0.64   | 0.93      | 0.39  | 1         | 0.53     | 0.84        | 0.72              | 0.39    |
| Std. Dev.                                                                                     | 0.45  | 0.48   | 0.25      | 0.49  | 0         | 0.50     | 0.37        | 0.44              | 0.49    |
| Min                                                                                           | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                           | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |

| Statistic                                                                                            | China | Taiwan | Hong Kong | Japan | Singapore | Malaysia | South Korea | All (excl. China) | World   |
|------------------------------------------------------------------------------------------------------|-------|--------|-----------|-------|-----------|----------|-------------|-------------------|---------|
| <b><u>sector:</u> If the participant works in a public sector: Yes = 1, No = 0</b>                   |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                                 | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                                 | 0.38  | 0.47   | 0.47      | 0.16  | 0.34      | 0.34     | 0.47        | 0.37              | 0.38    |
| Std. Dev.                                                                                            | 0.49  | 0.50   | 0.50      | 0.37  | 0.48      | 0.47     | 0.50        | 0.48              | 0.48    |
| Min                                                                                                  | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                                  | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |
| <b><u>food:</u> If the household had enough money for food last 12 months: Yes = 1, No = 0</b>       |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                                 | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                                 | 0.92  | 0.84   | 0.93      | 0.93  | 0.92      | 0.75     | 0.78        | 0.86              | 0.68    |
| Std. Dev.                                                                                            | 0.27  | 0.37   | 0.25      | 0.25  | 0.27      | 0.43     | 0.42        | 0.35              | 0.47    |
| Min                                                                                                  | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                                  | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |
| <b><u>shelter:</u> If the household had enough money for shelter last 12 months: Yes = 1, No = 0</b> |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                                 | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                                 | 0.85  | 0.89   | 0.91      | 0.94  | 0.95      | 0.71     | 0.73        | 0.85              | 0.77    |
| Std. Dev.                                                                                            | 0.36  | 0.32   | 0.29      | 0.24  | 0.22      | 0.45     | 0.44        | 0.35              | 0.42    |
| Min                                                                                                  | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                                  | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |

| Statistic                                                                                                                     | China | Taiwan | Hong Kong | Japan | Singapore | Malaysia | South Korea | All (excl. China) | World   |
|-------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------|-------|-----------|----------|-------------|-------------------|---------|
| <b><u>receivemoney:</u> If the household received help in the form of money or food in the past 12 months: Yes = 1 No = 0</b> |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                                                          | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                                                          | 0.14  | 0.03   | 0.13      | 0.03  | 0.11      | 0.18     | 0.14        | 0.10              | 0.21    |
| Std. Dev.                                                                                                                     | 0.34  | 0.17   | 0.34      | 0.17  | 0.32      | 0.38     | 0.35        | 0.30              | 0.41    |
| Min                                                                                                                           | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                                                           | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |
| <b><u>secondary:</u> If the participant completed secondary education (9-15 years of education): Yes = 1, No = 0</b>          |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                                                          | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                                                          | 0.27  | 0.46   | 0.62      | 0.61  | 0.59      | 0.54     | 0.48        | 0.55              | 0.50    |
| Std. Dev.                                                                                                                     | 0.44  | 0.50   | 0.49      | 0.49  | 0.49      | 0.50     | 0.50        | 0.50              | 0.50    |
| Min                                                                                                                           | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                                                           | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |
| <b><u>college:</u> If the participant has a college degree: Yes = 1, No = 0</b>                                               |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                                                          | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                                                          | 0.07  | 0.40   | 0.23      | 0.26  | 0.21      | 0.31     | 0.38        | 0.30              | 0.16    |
| Std. Dev.                                                                                                                     | 0.26  | 0.49   | 0.42      | 0.44  | 0.4       | 0.46     | 0.49        | 0.46              | 0.37    |
| Min                                                                                                                           | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                                                           | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |

| Statistic                                                                                                                          | China | Taiwan | Hong Kong | Japan | Singapore | Malaysia | South Korea | All (excl. China) | World   |
|------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----------|-------|-----------|----------|-------------|-------------------|---------|
| <b><i><u>married:</u> If the participant is married: Yes = 1, No = 0</i></b>                                                       |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                                                               | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                                                               | 0.8   | 0.64   | 0.56      | 0.68  | 0.6       | 0.58     | 0.62        | 0.61              | 0.52    |
| Std. Dev.                                                                                                                          | 0.4   | 0.48   | 0.5       | 0.47  | 0.49      | 0.49     | 0.48        | 0.49              | 0.5     |
| Min                                                                                                                                | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                                                                | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |
| <b><i><u>borrowed:</u> If the participant borrowed any money during the past 12 months: Yes = 1, No = 0</i></b>                    |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                                                               | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                                                               | 0.33  | 0.29   | 0.26      | 0.20  | 0.20      | 0.60     | 0.39        | 0.32              | 0.43    |
| Std. Dev.                                                                                                                          | 0.47  | 0.45   | 0.44      | 0.40  | 0.40      | 0.49     | 0.49        | 0.47              | 0.49    |
| Min                                                                                                                                | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                                                                | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |
| <b><i><u>welfare:</u> If the participant received any transfers from the government in the past 12 months: Yes = 1, No = 0</i></b> |       |        |           |       |           |          |             |                   |         |
| Obs.                                                                                                                               | 4,184 | 1,000  | 1,007     | 1,006 | 1,000     | 1,000    | 1,000       | 6,013             | 146,688 |
| Mean                                                                                                                               | 0.16  | 0.11   | 0.17      | 0.11  | 0.28      | 0.31     | 0.20        | 0.20              | 0.15    |
| Std. Dev.                                                                                                                          | 0.37  | 0.31   | 0.37      | 0.32  | 0.45      | 0.46     | 0.40        | 0.40              | 0.35    |
| Min                                                                                                                                | 0     | 0      | 0         | 0     | 0         | 0        | 0           | 0                 | 0       |
| Max                                                                                                                                | 1     | 1      | 1         | 1     | 1         | 1        | 1           | 1                 | 1       |

SOURCE: Authors' calculations based on the Gallup World Poll and Global Findex.

**TABLE 11**  
**TOTAL DECOMPOSITION RESULTS: “SAVE”**

|                                    | Taiwan               | Hong Kong           | Japan                | Singapore            | Malaysia             | South Korea          | All<br>(excl. China) |
|------------------------------------|----------------------|---------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “SAVE”</b> |                      |                     |                      |                      |                      |                      |                      |
| <b>China</b>                       | 0.686                | 0.686               | 0.686                | 0.686                | 0.686                | 0.686                | 0.686                |
| <b>Counterfactual</b>              | 0.743                | 0.670               | 0.732                | 0.730                | 0.828                | 0.743                | 0.741                |
| <b><i>DIFFERENCE</i></b>           | <b><i>-0.057</i></b> | <b><i>0.016</i></b> | <b><i>-0.045</i></b> | <b><i>-0.044</i></b> | <b><i>-0.142</i></b> | <b><i>-0.057</i></b> | <b><i>-0.054</i></b> |
| <b>TOTAL DECOMPOSITION</b>         |                      |                     |                      |                      |                      |                      |                      |
| <b>Endowments</b>                  | -0.145***            | -0.145***           | -0.097***            | -0.028               | -0.120***            | -0.074**             | -0.087***            |
| <b>Coefficients</b>                | 0.074***             | 0.153***            | -0.011               | 0.072***             | -0.050**             | 0.060***             | 0.050***             |
| <b>Interaction</b>                 | 0.015                | 0.008               | 0.063**              | -0.088***            | 0.029                | -0.420               | -0.017               |
| <b>Observations</b>                |                      |                     |                      |                      |                      |                      |                      |
| <b>China</b>                       | 4184                 | 4184                | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 |
| <b>Counterfactual</b>              | 1000                 | 1007                | 1006                 | 1000                 | 1000                 | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.10.

**TABLE 12**  
**TOTAL DECOMPOSITION RESULTS: “MEANINGFUL SAVINGS”**

|                                                  | Taiwan               | Hong Kong          | Japan                | Singapore            | Malaysia           | South Korea          | All<br>(excl. China) |
|--------------------------------------------------|----------------------|--------------------|----------------------|----------------------|--------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “MEANINGFUL SAVINGS”</b> |                      |                    |                      |                      |                    |                      |                      |
| <b>China</b>                                     | 0.46                 | 0.46               | 0.46                 | 0.46                 | 0.46               | 0.46                 | 0.46                 |
| <b>Counterfactual</b>                            | 0.505                | 0.59               | 0.772                | 0.523                | 0.33               | 0.451                | 0.529                |
| <b><i>DIFFERENCE</i></b>                         | <b><i>-0.044</i></b> | <b><i>0.13</i></b> | <b><i>-0.312</i></b> | <b><i>-0.063</i></b> | <b><i>0.13</i></b> | <b><i>-0.009</i></b> | <b><i>-0.069</i></b> |
| <b>TOTAL DECOMPOSITION</b>                       |                      |                    |                      |                      |                    |                      |                      |
| <b>Endowments</b>                                | -0.206***            | -0.226***          | -0.199***            | -0.011               | -0.07***           | -0.077*              | -0.133***            |
| <b>Coefficients</b>                              | -0.028               | -0.097***          | -0.306***            | -0.045**             | 0.129***           | -0.002               | -0.05***             |
| <b>Interaction</b>                               | 0.134***             | 0.193***           | 0.193***             | -0.005               | 0.071**            | 0.088**              | 0.114***             |
| <b>Observations</b>                              |                      |                    |                      |                      |                    |                      |                      |
| <b>China</b>                                     | 4184                 | 4184               | 4184                 | 4184                 | 4184               | 4184                 | 4184                 |
| <b>Counterfactual</b>                            | 1000                 | 1007               | 1006                 | 1000                 | 1000               | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.10.

**TABLE 13**  
**TOTAL DECOMPOSITION RESULTS: “SAVING FOR OLD AGE”**

|                                                  | Taiwan               | Hong Kong          | Japan                | Singapore            | Malaysia             | South Korea          | All<br>(excl. China) |
|--------------------------------------------------|----------------------|--------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “SAVING FOR OLD AGE”</b> |                      |                    |                      |                      |                      |                      |                      |
| <b>China</b>                                     | 0.397                | 0.397              | 0.397                | 0.397                | 0.397                | 0.397                | 0.397                |
| <b>Counterfactual</b>                            | 0.457                | 0.387              | 0.462                | 0.485                | 0.58                 | 0.449                | 0.47                 |
| <b><i>DIFFERENCE</i></b>                         | <b><i>-0.059</i></b> | <b><i>0.01</i></b> | <b><i>-0.065</i></b> | <b><i>-0.087</i></b> | <b><i>-0.182</i></b> | <b><i>-0.051</i></b> | <b><i>-0.072</i></b> |
| <b>TOTAL DECOMPOSITION</b>                       |                      |                    |                      |                      |                      |                      |                      |
| <b>Endowments</b>                                | -0.068**             | -0.062             | -0.07**              | -0.007               | -0.09***             | -0.047               | -0.05***             |
| <b>Coefficients</b>                              | -0.01                | 0.083***           | 0.028                | -0.067***            | -0.269***            | 0.011                | -0.037***            |
| <b>Interaction</b>                               | 0.019                | 0.011              | -0.022               | -0.013               | 0.176***             | -0.016               | 0.015                |
| <b>Observations</b>                              |                      |                    |                      |                      |                      |                      |                      |
| <b>China</b>                                     | 4184                 | 4184               | 4184                 | 4184                 | 4184                 | 4184                 | 4184                 |
| <b>Counterfactual</b>                            | 1000                 | 1007               | 1006                 | 1000                 | 1000                 | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.10.

**TABLE 14**  
**TOTAL DECOMPOSITION RESULTS: “SAVING FOR EDUCATION”**

|                                                    | Taiwan               | Hong Kong            | Japan               | Singapore           | Malaysia             | South Korea          | All<br>(excl. China) |
|----------------------------------------------------|----------------------|----------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “SAVING FOR EDUCATION”</b> |                      |                      |                     |                     |                      |                      |                      |
| <b>China</b>                                       | 0.253                | 0.253                | 0.253               | 0.253               | 0.253                | 0.253                | 0.253                |
| <b>Counterfactual</b>                              | 0.354                | 0.268                | 0.247               | 0.323               | 0.506                | 0.299                | 0.332                |
| <b><i>DIFFERENCE</i></b>                           | <b><i>-0.101</i></b> | <b><i>-0.015</i></b> | <b><i>0.007</i></b> | <b><i>-0.07</i></b> | <b><i>-0.253</i></b> | <b><i>-0.046</i></b> | <b><i>-0.08</i></b>  |
| <b>TOTAL DECOMPOSITION</b>                         |                      |                      |                     |                     |                      |                      |                      |
| <b>Endowments</b>                                  | -0.047*              | -0.038               | 0.048*              | -0.051**            | -0.14***             | 0.009                | -0.044***            |
| <b>Coefficients</b>                                | -0.038**             | 0.027                | -0.07***            | -0.036*             | -0.107***            | -0.046**             | -0.045** *           |
| <b>Interaction</b>                                 | -0.015               | -0.004               | 0.028               | 0.017               | -0.005               | -0.009               | 0.009                |
| <b>Observations</b>                                |                      |                      |                     |                     |                      |                      |                      |
| <b>China</b>                                       | 4184                 | 4184                 | 4184                | 4184                | 4184                 | 4184                 | 4184                 |
| <b>Counterfactual</b>                              | 1000                 | 1007                 | 1006                | 1000                | 1000                 | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.10.

**TABLE 15**  
**TOTAL DECOMPOSITION RESULTS: “SAVING FOR BUSINESS”**

|                                                   | Taiwan               | Hong Kong           | Japan               | Singapore           | Malaysia             | South Korea          | All<br>(excl. China) |
|---------------------------------------------------|----------------------|---------------------|---------------------|---------------------|----------------------|----------------------|----------------------|
| <b>OVERALL DIFFERENCE – “SAVING FOR BUSINESS”</b> |                      |                     |                     |                     |                      |                      |                      |
| <b>China</b>                                      | 0.147                | 0.147               | 0.147               | 0.147               | 0.147                | 0.147                | 0.147                |
| <b>Counterfactual</b>                             | 0.192                | 0.093               | 0.043               | 0.113               | 0.196                | 0.266                | 0.15                 |
| <b><i>DIFFERENCE</i></b>                          | <b><i>-0.045</i></b> | <b><i>0.054</i></b> | <b><i>0.104</i></b> | <b><i>0.034</i></b> | <b><i>-0.049</i></b> | <b><i>-0.119</i></b> | <b><i>-0.003</i></b> |
| <b>TOTAL DECOMPOSITION</b>                        |                      |                     |                     |                     |                      |                      |                      |
| <b>Endowments</b>                                 | -0.052**             | -0.035              | 0.003               | -0.013              | -0.11***             | -0.019               | -0.051***            |
| <b>Coefficients</b>                               | -0.023               | 0.049***            | 0.066***            | 0.001               | 0.02                 | -0.12***             | -0.001               |
| <b>Interaction</b>                                | 0.03                 | 0.039               | 0.035**             | 0.046**             | 0.04*                | 0.012                | 0.049***             |
| <b>Observations</b>                               |                      |                     |                     |                     |                      |                      |                      |
| <b>China</b>                                      | 4184                 | 4184                | 4184                | 4184                | 4184                 | 4184                 | 4184                 |
| <b>Counterfactual</b>                             | 1000                 | 1007                | 1006                | 1000                | 1000                 | 1000                 | 6013                 |

\*\*\* p<.01, \*\* p<.05, \* p<.10.