Trade Shock and Consumption Risk Sharing

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Abstract

Using micro-level data from the Consumer Expenditure Survey, we study how
household consumption in the United States reacted to the China trade shock.
From 1993 to 2007 household consumption declined due to the increase import
competition from China. We show that it was the result of two concurrent effects:
deterioration of household income and reduction of housing prices. However, this
two-fold negative impact of Chinese import competition was dampened in states
that liberalized their financial sector earlier. We argue that this smoothing effect
on consumption, in particular on housing consumption, might have been achieved
through better access to finance in states with more open financial markets.

Keywords: trade shock, financial deregulation, housing, consumption, risk sharing

JEL Classification: E21, F45, F62, G18

1   Introduction

The growing import competition from China since the early 1990's has sparked debate among politicians and economists in many developed countries, especially after the China's entry into the World Trade Organization (WTO) in 2001. A better understanding of the costs and benefits of China's rapid rise on local economies is of high importance for policymakers. In their seminal work, Autor, Dorn and Hanson (2013) document a so-called "China Syndrome", which shows that U.S. manufacturing industries have been exposed to Chinese import competition between 1991 and 2007. The China trade shock has caused substantial adjustment costs in the U.S. local labor markets, such as higher unemployment rates and lower wages (Autor, Dorn and Hanson, 2016).

In this paper, we extend the analysis of the impact of the China trade shock on the U.S. economy by examining how the rise in Chinese import competition affected U.S. household consumption for the period from 1993 to 2007. To the best of our knowledge no study has investigated this question so far, although the answer to it is not straightforward. There are several competing forces through which rising imports from China might have affected household consumption. On the one hand, the negative impact of Chinese import competition on wages and employment implies lower income and consumption for households. On the other hand, the China trade shock reduced the U.S. manufacturing price index (Amiti, Dai, Feenstra and Romalis, 2017), which should countervail the negative impact on income and stimulate domestic demand for manufacturing goods. Furthermore, as recent literature shows, the U.S. housing value has also been exposed to import competition from China, which has significantly deteriorated local demand for housing (Feler and Senses, 2017).

In this study, we also stress the role of U.S. states' financial markets integration in smoothing the negative impact of Chinese imports on household income and consumption. We argue that households in financially liberalized states might have benefited from having more open financial systems, which would allow them to increase consumption risk sharing. For instance, an easier access to finance and credit markets would allow households to insure their consumption more efficiently against idiosyncratic income and price shocks caused by the increasing import competition from China. Hoffmann and Stewen

(2011) find that state-level banking deregulation during the 1970's and 1980's significantly improved interstate risk sharing mainly through the consumption smoothing and particularly so during nationwide economic downturns. In addition, recent research established a positive effect of state-level financial liberalization on local demand for housing and house prices (e.g. Favara and Imbs, 2015; Mian, Sufi and Verner, 2017; Hoffmann and Stewen, 2019). Hence, in our study, we hypothesize that an increased consumption risk sharing along with more stable house prices in financially more integrated states helped to mitigate the negative impact of Chinese imports on household consumption.

Figure 1 shows the evolution of average income after taxes and consumption of U.S. households for the period 1993 to 2012. The sample includes households with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. It is evident that the average household income first decreased in the beginning of the 1990's when the China trade shock occurred, then increased until 2005, and rapidly fell during the financial crisis of 2007-2009. At the same time, the average household consumption slowly decreased from 1993 to 1997, then remained stable until 2005, and rapidly dropped afterward. In Figure 2 we split the sample into two groups of households: one residing in states that deregulated their banking sector before 1985 and the other one—after 1985. The results indicate that in the beginning of the 1990's the average income of households in early deregulation states remained stable, whereas the average income of households in late deregulation states fell substantially. We can observe an analogous picture for the average household consumption: households in late deregulation states experienced a stronger drop in consumption compared to households in early deregulation states. Hence, examining the effects of trade induced income shocks on local consumption in interaction with the financial liberalization appears to be an important contribution to present literature.

The key findings of this paper are as follows. First, the rising import competition from China has negatively affected U.S. households' income and consumption, in particular housing consumption. However, this negative impact has been considerably smoothed in states that liberalized their financial sector earlier. Second, we hypothesize that this smoothing effect can be explained by an increased consumption risk sharing along with more stable house prices in states that were financially more integrated with

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the rest of the U.S. Therefore, we examine the negative impact of the China trade shock on household consumption through the income and house price channels. We confirm that households in states with more open financial sectors were able to better insure their consumption against idiosyncratic income and price shocks induced by the Chinese imports. This result holds in particular for housing consumption. Third, we estimate consumption risk sharing separately for home owners and home renters. We find that financial deregulation facilitated consumption smoothing through the income channel for both groups of households, while the price channel was most important for home owners, and in particular for home owners with mortgages. The latter result suggest that more stable house prices in early deregulation states helped to sustain the housing value for home owners, which in turn allowed them to better insure their consumption against idiosyncratic income risk.

This paper proceeds as follows. Section 2 describes data and measurements used in the present study. Section 3 presents the empirical framework and estimation results. Section 4 concludes this paper.

2 Data

2.1 Household Data

Our main data on household income and consumption comes from the Consumer Expenditure Survey (CES) provided by the Bureau of Labor Statistics (BLS). The CES is a national probability sample of households designed to represent the U.S. total civilian non-institutional population. The CES consists of two surveys: the Interview Survey and the Diary Survey. The Interview Survey is designed to collect data on durable and non-durable consumption expenditures, whereas the Diary Survey is designed to collect data on weekly expenditures of frequently purchased items. In the present study we use data from the Interview Survey, which is a rotating panel survey targeting approximately 5000 households to be interviewed in five consecutive calendar quarters. The Interview Survey contains detailed information on up to 95 percent of total household income and

expenditures, as well as information on family characteristics and housing structure.[1]

The smallest geographical area of households' residence available in the CES is a U.S. state.[2] The CES started to release the state identifier of households in 1993. For this reason, our rotating panel data starts in 1993 and ends in 2007, before the global financial crisis. Furthermore, we select a sample of households, for which we have consistent data for both income and expenditures for the same time period. In particular, we impose the following restrictions to our sample: households that have completed the full set of five interviews, households that are classified as complete income respondents[3], households with positive income, food and non-food expenditures, and households with an age of the reference person above 21 and below 64. This results in a sample of 24,641 households. Given the BLS population weights provided in the CES for each household, our sample represents about 40% of the U.S. total civilian non-institutional population in each year.

The CES collects data on annual income of households in the second and fifth interviews only. It defines income before taxes as the sum of reported annual wages and salaries of all household members plus business and farm income, Social Security and Supplemental Security income, and unemployment compensation. Further, it computes income after taxes as income before taxes minus reported Federal, state and local taxes, and other taxes. We use after-tax income reported by the households in their fifth interviews as our main measures of household income.[4] We assign a household to year x if its fifth (last) interview is completed before the second calendar quarter of year $x + 1$, which is standard in the literature (see Krueger and Perri (2006)).

The CES aggregates household expenditures into total expenditures and the following main categories of consumption: Food, Alcoholic Beverages, Housing, Apparel

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[1]In our study we could also use data from the Panel Study of Income Dynamics (PSID), which reports both income and consumption data. While the PSID contains continuous expenditure data on food and housing categories from 1990, expenditure data on other main categories of consumption are available only from 1999. Therefore these data are of limited use for our analysis.

[2]Due to nondisclosure requirements, the CES has to meet the Census Microdata Review Panel's criterion for releasing geographic information of households. This criterion states that the smallest geographically identifiable area has a minimum population size of 100,000. Source: CES Documentation 1993.

[3]The distinction between complete and incomplete income respondents is based in general on whether the household provides values for major sources of income, such as wages and salaries, self-employment income, and social security income.

[4]In the robustness tests we also use income before taxes, earnings, and salaries as alternative measures of household income.

and Services, Transportation, Health Care, Entertainment, Personal Care, Reading, Education, Tobacco and Smoking Supplies, Miscellaneous. Moreover, the Housing category is further decomposed into three subcategories, namely Shelter, Services, and House-furnishing and Equipment. The Shelter category includes expenditures for owned and rented dwellings, mortgage interest, insurance, and maintenance. Services include payments for utilities, fuels, public services, and other household operations. The House-furnishing and Equipment category includes expenditures on furniture, textiles, floor covering, major and small appliances, and miscellaneous household equipment. We sum up total expenditures and expenditures in each category from the second through the fifth interviews, which provides us with a measure of annual consumption consistent with the measure of annual income.[5] Furthermore, we deflate all income and consumption variables using the U.S.-wide Consumer Price Index (CPI) from the BLS with a base year 2007.

Since the unit of observation for the CES is a household (consumer unit), the income and expenditures data are provided at the household level. As in the current analysis we are interested in distribution of resources per capita, similar to Krueger and Perri (2006), we divide household income and expenditures by the number of adult equivalents in a household using the OECD equivalence scale.[67] Furthermore, we use family characteristics files from the CES to complement our data with the following set of household characteristics: a dummy variable Urban, which equals one if a household resides in a urban area; a dummy variable Race, which equals one if a reference person is white; a dummy variable Sex, which equals one if a reference person is male; a dummy variable Marital, which equals one if a reference person is married; a dummy variable Education, which equals one if a reference person has a college degree or higher; and the age of a reference person, which takes a value between 21 and 64.[8]

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[5]Our measures of both annual income and consumption are based on the procedure described in Krueger and Perri (2006).

[6]Number of adults $= 1 + 0.7 \times$(total number of household members - number of members less than 18 years old - 1) $+ 0.5 \times$number of members less than 18 years old.

[7]We also conduct our analysis using income and expenditure variables per household or per household earner (number of earners in a household). This does not change the main results of our study. The estimation results at the household and household earner levels are available on request.

[8]A reference person of a household is a person or one of the persons who owns or rents a house.

2.2 Chinese Import Exposure per Worker

To estimate an average causal effect of the China trade shock on household income and consumption at the state level, we need an exogenous measure of local (state) labor markets exposure to import competition from China. Our measurement of Chinese import exposure per worker at the state level is based on the measurement developed in Autor et al. (2013). The Chinese imports to the U.S. are apportioned to a region according to its share of national industry employment. Accordingly, we use annual trade flow data at the SIC-industry level for the U.S. from 1993 to 2007,[9] and we use information on local industry employment structure at the state level for the same time period from the County Business Patterns (CBP) provided by the U.S. Census Bureau.[10] We then construct the measure of Chinese import exposure per worker (IE_{st}) in state s in year t as a sum of U.S. imports from China per worker ($\frac{IM_{ucjt}}{L_{ujt-1}}$) over the two-digit sub-industries in the manufacturing sector weighted by the sub-industry j's share of total employment in state s at the beginning of year t (i.e. with $\frac{L_{sjt-1}}{L_{st-1}}$ being predetermined):

$$IE_{ust} = \sum_j \frac{L_{sjt-1}}{L_{st-1}} \cdot \frac{IM_{ucjt}}{L_{ujt-1}}. \tag{1}$$

To identify the supply-driven component of the Chinese import exposure, similar to Autor et al. (2013), we calculate an instrument for our measure of import exposure per worker using Chinese exports to eight other high-income countries (IM_{ocjt}):[11]

$$IE_{ost} = \sum_j \frac{L_{sjt-1}}{L_{st-1}} \cdot \frac{IM_{ocjt}}{L_{ujt-1}}. \tag{2}$$

2.3 Financial Openness

According to our hypothesis, households residing in more financially integrated states could better smooth consumption, which helped them to stabilize local demand for non-

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[9]The trade flow data at the four-digit SIC industry level is taken from the online Data Appendix of Autor et al. (2013).

[10]The CBP is an annual series that provides sub-national economic data on U.S. business establishments by industry. This series includes the number of establishments, employment, and annual payroll. Source: https://www.census.gov/programs-surveys/cbp.html.

[11]These countries include Australia, Denmark, Finland, Germany, Japan, New Zealand, Spain, and Switzerland.

tradable goods such as housing. To explore this hypothesis empirically, we exploit the fact that the U.S. experienced a period of significant deregulation of the banking industry since the 1970's until the early 1990's (Jayaratne and Strahan, 1996). Since states deregulated in different years, there was a considerable heterogeneity at the state level in the degree of financial liberalization when local economies were hit by the China shock in the beginning of the 1990's. Hence, our measurement of state financial openness takes into account the continuity in the deregulation process across states and it equals the number of years that have passed since the first year of adopting either Intrastate Branching and Interstate Banking deregulation laws until 1995, the year by which all states have adopted both laws:[12]

$$DI_s = 1995 - \min(Year\ of\ Intrastate\ Branching, Year\ of\ Interstate\ Banking). \quad (3)$$

Following equation (3), more financially integrated states are associated with a larger financial deregulation index, since these states began deregulating their banking sector further in the past.[13]

To provide a better overview, Table A1 in Appendix reports summary statistics of all variables and measurements used in the present study. It also splits the whole sample into two groups of early and late deregulation states. We classify states as early liberalizers if they opened their banking markets before 1985.[14] Conversely, states that opened their banking markets only after 1985 are classified as late liberalizers.

3 Empirical Results

In this section, we first analyze the impact of the China trade shock on U.S. household income and consumption. We also analyze how U.S. state-level financial deregulation helped to mitigate this impact. Second, to better understand the impact of Chinese

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[12] With the exception of Iowa, which has adopted Interstate Banking law in 1991, but Intrastate Branching only in 1997.

[13] In the robustness tests we use two alternative measures of state financial openness developed in Hoffmann and Stewen (2019) and Mian et al. (2017)). Our main results are robust to using these alternative measures.

[14] 1985 is a median of the first year of state financial deregulation in our sample.

imports on household consumption, we investigate to which extent U.S. household consumption was insured against idiosyncratic income and price shocks, in particular those induced by the China trade shock. In doing so, we also stress the role of financial integration in consumption risk sharing among households within a state. Finally, based on the estimation results, we examine the impact of Chinese imports on household consumption through the income- and price-channels. We thereby distinguish between households who own and rent a house.

3.1 A First Look at the Data

In Figure 3 we take a first look at the data. The figure plots Chinese import exposure per worker against households' income after taxes, total expenditures, and expenditures for apparel and housing categories in 1995.[15] Further, the figure estimates a linear relationship between Chinese imports per worker and household income and expenditures for two groups of households, namely those residing in states that deregulated their banking sector before 1985 and after 1985 respectively. The estimation results suggest a negative correlation between Chinese imports and household income and expenditures in late deregulation states (red dashed line). Conversely, the link between Chinese imports and household income and expenditures is insignificant or even positive (green solid line), such as for expenditures in the housing category. Hence, this figure provides first evidence for the main hypothesis of our study that household income and consumption have been less exposed to rising import competition from China in financially more open states.[16]

3.2 The Impact of the Trade Shock on Income and Consumption

Now we use our rotating panel data set for the period 1993 to 2007 to estimate the impact of Chinese imports on household income and consumption through the following

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[15]For this figure we have chosen 1995, because it is the last year by which all states deregulated their financial sector. However, the graphs look similar for other years in our sample.

[16]In the following, we use the terms expenditures and consumption interchangeably.

regression model:

$$y_{i,s,t} = \beta_1 IE_{s,t} + \beta_2 IE_{s,t} \times DI_s + \beta_3 \mathbf{X}_{i,s,t} + \alpha_s + \tau_t + \epsilon_{i,s,t}, \tag{4}$$

where $y_{i,s,t}$ denotes a logarithmic income or consumption of household i living in state s in year t. $IE_{s,t}$ is our measure of Chinese import exposure per worker in state s in year t, which is given in equation (1) and instrumented by the non-US Chinese import exposure per worker as described in equation (2). DI_s is our measure of financial openness of state s given in equation (3). The vector $\mathbf{X}_{i,s,t}$ includes the set of household characteristics, such as dummy variables for urban, race, sex, marital status, as well as age and educational level of the reference person as described in the section "Household Data". Finally, α_s and τ_t represent state and year fixed effects respectively. Moreover, we run all regression using BLS population weights and robust standards errors clustered by state.

Table 1 reports estimation results for income after taxes. The first four columns show the estimated relationship between an exogenous increase in Chinese imports and household income without the interaction term with the deregulation index. The results suggest that the impact of the trade shock on household income was differentiated and depended on various household characteristics, especially on the educational level of the household's head. Thus, for example, estimates in column 2 indicate that income of the households with a college degree has been less threatened by the Chinese imports. This result is in line with the findings in Autor et al. (2013) suggesting that a significant negative effect of Chinese import exposure on average wage and employment within U.S. commuting zones was more pronounced for non-college workers than for college workers. Also, the results in Table 1, columns 3 and 4, indicate that families living in urban areas have been less affected by the China trade shock, while race, age, and gender of the household's head were irrelevant for the import exposure. Columns 5 to 8 include the interaction term with the deregulation index to the previous regressions in columns 1 to 4 respectively. The estimated coefficients on the interaction terms suggest that the negative impact of Chinese imports on household income has been significantly mitigated in states that liberalized their banking sector further in the past. The latter result is consistent with the findings in Hoffmann and Ruslanova (2019) suggesting that U.S. state-level banking deregulation has mitigated the negative impact of Chinese import

exposure on state-level income and employment. The estimation results in Table 1 also indicate that it is necessarily to control for household characteristics when estimating the impact of trade-induced income shocks on household income, i.e. the estimated coefficients on the interaction terms with the dummy variables Education, Marital, and Urban are statistically significant and have expected signs. Our preferred specification with the full set of controls in column 8 implies that a 1000 U.S. Dollars ceteris paribus increase in imports exposure per worker would reduce household income after taxes by 26 percent. However, families living in urban areas with a household head possessing a college degree would significantly alleviate the negative impact of the trade shock on own income. Moreover, a 10 years earlier financial deregulation would reduce the negative impact on income by 2 percentage points, which is statistically significant at the 1 percent level. To check robustness of these findings, Table A2 in Appendix shows estimation results of the regression model (4) for the alternative measures of households income, namely income before taxes, earnings, and salaries. These are in line with the estimation results in Table 1.

Table 2 shows estimation results of equation (4) for household total expenditures as well as expenditures in the main categories of consumption, such as food, housing, apparel, transportation, health, and education, including the full set of controls. The results suggest that the Chinese import exposure has significantly reduced household total expenditures, and in particular expenditures in the housing category. The estimated coefficient implies that a 1000 U.S. Dollars ceteris paribus increase in imports exposure per worker would reduce household total expenditures by 10 percent and expenditures on housing by 13 percent. However, the estimated coefficient on the interaction term with the deregulation index suggest that a 10 years earlier financial deregulation mitigated the negative impact of Chinese imports on total expenditures by 1 percentage point. Since the housing category is a very broad expenditure aggregation, Table A3 in Appendix shows estimation results for the housing subcategories, namely Shelter, Services, and Equipment. The estimation results suggest that the negative impact of Chinese imports on housing consumption is the largest for the Shelter category, which includes payments for owned and rented dwellings, mortgage interest, insurance, and maintenance, and accounts for about 65 percent of total expenditures on housing. Furthermore, the estimation results in Tables 2 and A3 are consistent with the findings in Hoffmann and Ruslanova (2019)

suggesting that the Chinese import exposure has caused a significant negative impact on the growth rate of state-level consumption, in particular for non-tradable consumption, and that this negative impact was significantly mitigated in early deregulation states.

Although the regression results in Table 2 provide consistent estimates, we argue that they should be interpreted rather as reduced form estimates. Since household consumption could be affected by a range of different factors omitted in the regression model, the estimates in Table 2 might be biased and underestimate the real impact of Chinese import exposure on household consumption. Moreover, the estimation results in Table 1 suggest a significant negative impact of Chinese imports on household income. Therefore, since household consumption depends largely on personal income, we conjecture that Chinese imports might have affected household consumption also indirectly through its negative impact on income. In the analysis that follows, we try to understand the impact of the China trade shock on households consumption in more depth.

3.3 State-Level Financial Deregulation and Consumption Risk Sharing

In this section, we examine how household consumption correlated with household income during the period from 1993 to 2007 and how state-level financial deregulation accommodated consumption risk sharing among households within a state. We measure consumption risk sharing through the following regression model:

$$\tilde{c}_{i,s,t} = \beta_1 \tilde{y}_{i,s,t} + \beta_2 \tilde{y}_{i,s,t} \times DI_s + \beta_3 \mathbf{X}_{i,s,t} + \alpha_s + \tau_t + \epsilon_{i,s,t}, \tag{5}$$

where $\tilde{y}_{i,s,t}$ and $\tilde{c}_{i,s,t}$ denote a respective logarithmic deviation of income and consumption of household i living in state s from the U.S.-wide average in year t. A subtraction of the nationwide time-specific mean captures the idiosyncratic components of household income and consumption and controls for aggregate income and consumption fluctuations, which might be non-stationary (see Ostergaard, Sørensen and Yosha (2002)). DI_s is the deregulation index of state s. The vector $\mathbf{X}_{i,s,t}$ is the set of household characteristics variables. α_s and τ_t represent state and year fixed effects respectively. In this regression

model, the coefficient β_1 estimates the amount of uninsured idiosyncratic income risk (i.e. deviation from the perfect risk sharing) in a financially closed state (i.e. with $DI_s = 0$), and β_2 estimates the impact of state financial openness on risk sharing.

Table 3 shows estimation results for total expenditures. The baseline estimate in the first column indicates that on average 46 percent of idiosyncratic shocks to household income was not insured during the time period from 1993 to 2007. The second column of Table 3 includes the interaction term with the deregulation index and suggests that a 10 years earlier financial liberalization reduced the share of unsecured idiosyncratic income risk by 20 percent, which is an economically significant impact. The next three columns include the interaction terms with the household characteristics and suggest that households with a higher educational level were able to better insure their consumption against idiosyncratic income risk. Other household characteristics enter the regressions insignificantly.

Table 4 estimates consumption risk sharing for various categories of consumption including the full set of controls. The estimation results suggest that consumption was less insured for durable goods such as housing and transportation, and non-tradable goods such as health and entertainment. Also note that the consumption categories food and transportation contain non-tradable goods such as food away from home and public transport respectively. The estimated coefficients on the interaction term with the deregulation index suggest that financial liberalization helped to better insure consumption against income shocks, particularly in the housing and entertainment categories. Table A4 in Appendix shows estimation results of the consumption risk sharing model (5) for the housing subcategories. It indicates that the largest share of unsecured risk is in the Shelter category followed by the Equipment and Services categories. However, the coefficient on the interaction term suggest that financial deregulation helped to better insure consumption against idiosyncratic income risk, which is significant only for the Shelter category. Thus, the estimation results of this subsection indicate that financial liberalization significantly improved consumption risk sharing, in particular for such non-tradable goods as housing and entertainment.

3.4 The Impact of the Trade Shock on Consumption through the Income and Price Channels

In section 2.1 we documented a significant negative impact of the China trade shock on U.S. household income, which we interpret rather as an individual, household-specific income shock. Nevertheless, as recent literature shows, the U.S. consumption price index has also been exposed to rising import competition from China (see e.g. Amiti et al., 2017). The latter constitutes an aggregate shock to the price level, in particular in the tradable industries such as manufacturing. At the same time, Feler and Senses (2017) find that U.S. house prices have been negatively affected by Chinese imports between 1990 and 2007, while Hoffmann and Ruslanova (2019) find that this negative impact was significantly mitigated in states that liberalized their financial sector early. Since household expenditures depend on both personal income and prices, in this section we aim to investigate how the China trade shock might have affected household consumption through its negative impact on income and prices separately. Moreover, we examine how financial deregulation helped to smooth household consumption through these channels.

To do so, we first apply a mediation analysis, which helps us to identify the effect of an independent variable on a dependent variable via the inclusion of a third mediator variable. Rather than a direct causal effect of the independent variable on the dependent variable, a mediation analysis proposes that the independent variable influences the mediator variable, which in turn influences the dependent variable. Thus, the mediator variable serves to clarify the nature of the relationship between the independent and dependent variables (MacKinnon, 2008). Hence, to justify the following analysis, we re-estimate the impact of Chinese imports on household consumption using regression model (4), into which we include income and state house price index as well as their interaction terms with the deregulation index. Table 5 performs the estimation results for total expenditures and Table A5 in Appendix—for housing expenditures. The results suggest that, if we control for household income and state house prices, the estimated coefficient on Chinese imports per worker becomes weaker and insignificant. Hence, the results indicate that Chinese imports might have affected household consumption indirectly through the income and (or) price channels.

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The Income Channel   To examine the impact of the China trade shock on household consumption through the income channel, we apply the instrumental variable approach, namely the Two-Stage Least Squares (2SLS), to the risk sharing regression model (5). We use the instrument of Chinese imports exposure per worker i.e. the variable $IE_{o,s,t}$, its interaction term with the deregulation index, $IE_{o,s,t} \times DI_s$, and the interaction terms of both with the household characteristics as instruments for the income variable $Y_{i,s,t}$ and its interaction term with the deregulation index, $Y_{i,s,t} \times DI_s$. Table A6 in Appendix shows the first-stage estimates for both terms and the corresponding F-statistics. Table 6 shows the 2SLS estimates for total expenditures and different categories of consumption. The results suggest that 81 percent of income shock induced by the Chinese imports translated into total expenditures, which has affected consumption in the categories such as food, housing, transportation, health, and entertainment. The estimated coefficient on the interaction term with the deregulation index implies that a 10 years earlier financial deregulation reduced the share of unsecured income risk by 17 percentage points in total consumption. However, this coefficient is significant only for the housing category and implies a 28 percentage points decrease in the share of unsecured income shocks caused by the Chinese imports exposure. Table A8 in Appendix reports the 2SLS estimates for three subcategories of housing consumption. The results indicate that financial deregulation significantly improved consumption risk sharing particularly in the subcategories Shelter and Equipment.

The Price Channel   To examine the impact of the China trade shock on household consumption through the price-channel, we apply the 2SLS technique to the following risk sharing regression model, in which household income is replaced by state house price indexes:[17]

$$\tilde{c}_{i,s,t} = \beta_1 \tilde{hp}_{s,t} + \beta_2 \tilde{hp}_{s,t} \times DI_s + \mathbf{X}_{i,s,t} + \alpha_s + \tau_t + \epsilon_{i,s,t}, \tag{6}$$

where $hp_{s,t}$ is a logarithmic deviation of the house price index in state s from the U.S.-wide house price index in year t. Analogously to the previous regression model, in equation (6) we instrument the house price index and the interaction term with the instrument of

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[17]The data on house price indexes are taken from the Federal Housing Finance Agency (https://www.fhfa.gov/DataTools/Downloads).

Chinese import exposure per worker, i.e. the variable $IE_{o,s,t}$, and its interaction terms with the deregulation index. Table A7 in Appendix documents the first-stage estimates for both terms and the corresponding F-statistics. The results indicate a significant drop in state house prices in response to an exogenous increase in Chinese imports, i.e. a 1000 U.S. Dollars increase in Chinese imports exposure per worker would decrease the state house price index by 25 percent. However, a 10 years earlier financial liberalization would reduce this negative impact by 11 percentage points, which is economically significant. Table 7 reports the 2SLS estimates of equation (6) for total expenditures and different categories of consumption. The results suggest that 40 percent of house price shocks caused by the Chinese imports translated into total expenditures, and 52 percent of house price shocks translated into expenditures in the housing category. However, the estimated coefficient on the interaction term with the deregulation index implies that a 10 years earlier financial deregulation reduced the impact of house price shocks by 20 percentage points on total consumption and by 25 percentage points on consumption in the housing category. Table A9 in Appendix reports the 2SLS estimates for three subcategories of housing expenditures, which are significant only for the Shelter category.

To summarize, the estimation results in Tables 6 and 7 provide evidence for a significantly negative impact of the China trade shock on household expenditures, which can be explained through its negative impact on both income and house prices. A significant drop in income and house prices caused by the Chinese imports reduced household expenditures in the consumption categories such as food, housing, transportation, health, and entertainment. However, a stabilizing effect of state-level financial deregulation on income and house prices significantly reduced the negative impact of income and price shocks caused by the Chinese imports on household total expenditures, which is particularly robust for the expenditures in the housing category.

3.4.1 Consumption Risk Sharing for Home Owners vs. Home Renters

In what follows, we conjecture that the impact of the China trade shock on household consumption, in particular on housing consumption, through the income- and price-channels was significantly different between households owning and renting a house. In order to

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test this, we split the whole sample of households into two groups: home owners and home renters. Thus, households that own a house with or without mortgage are classified as home owners, and households that occupy their homes for rent payments are classify as home renters. We first estimate a linear relationship between Chinese import exposure per worker and household expenditures for two groups of households in early and late deregulation states. Figure 4 plots the estimation results for total expenditures and expenditures in the housing category in 1995. The results suggest that the correlation between Chinese imports and household consumption is significantly negative for home owners in late deregulation states, whereas it is positive for home owners in early deregulation states. In contrast, for home renters this correlation is slightly negative in late deregulation states and insignificant in early deregulation states.

We then estimate the regression models (5) and (6) using the 2SLS procedure and our rotating panel from 1993 to 2007 for two groups of households separately. Tables 8 and 9 show the estimation results for total and housing expenditures respectively. It is evident that both groups of households, home owners and home renters, have been affected by the China trade shock through the income-channel. It is also evident that financial deregulation reduced the impact of income shocks on total and housing consumption for both groups of households. Most interestingly, the regression results show that the house price channel was more important for consumption expenditures of home owners, which is highly significant for expenditures in the housing category (see Table 9). The price shocks, however, were significantly smoothed for home owners in states that deregulated their financial system earlier. Table A10 in Appendix shows estimation results of the same regressions for the Shelter category, which accounts for about 65 percent of total expenditures in the housing category. The results suggest that earlier financial deregulation has indeed facilitated consumption smoothing in this category through the income- and price-channels, which is statistically significant for home owners but not for home renters. Moreover, our results are consistent with the findings of Hryshko, Luengo-Prado and Sorensen (2009) that homeowners were able to better smooth consumption than renters in response to idiosyncratic income shocks.

In order to better understand why the price channel was mainly relevant for consumption expenditures of homeowners, we further split the sample of homeowners into

owners with and without mortgage. Table 10 shows the estimation results for total housing expenditures and Table A11 in Appendix shows the results for expenditures in the Shelter category. The regression results suggest that the effect of Chinese imports on household expenditures through the income-channel was almost the same for homeowners with and without mortgage, whereas only homeowners with mortgages have been significantly exposed to the price shocks caused by Chinese imports. However, the results also indicate that the impact of the price shocks on household expenditures was significantly smoothed in states that liberalized their banking sector earlier. Furthermore, we run the same risk sharing regressions as in (5) and (6) for mortgage payments of homeowners with mortgages. The regression results in Table 11 confirm that households with mortgages were able to better secure their mortgage payments against idiosyncratic income and price risks induced by the China trade shock.

To summarize, the estimation results in Figure 4, Tables 8 and 9 provide evidence that the impact of Chinese import exposure on U.S. household consumption was significantly different between home owners and home renters. The results also suggest that relatively stable house prices in early deregulation states helped to sustain the value of housing and therefore the wealth of home owners. This in turn allowed homeowners to collateralize their houses and thereby to better insure their consumption against idiosyncratic income and price shocks caused by the China trade shock. Moreover, an easier access to finance in early deregulation states allowed homeowners with mortgages to better secure their mortgages against idiosyncratic risk and therefore to better smooth their expenditures.

3.5 The Impact of the Trade Shock on Mortgages, Home Rent and Home Size

Last but not least, we estimate the effects of the China trade shock on mortgage lending and housing valuation of U.S. households. The CES reports statistics on Dollar amount of household mortgage originated, the year of mortgage origination, and the mortgage term. Hence, we estimate the regression model (4) using the logarithmic Dollar amount of mortgage originated as a dependent variable and the measure of Chinese import expo-

sure in the year of mortgage origination and controlling for the mortgage term. The 2SLS regression results in Table A12 in Appendix imply a significant negative impact of an exogenous increase in Chinese imports on household mortgage lending, when we control for household characteristics (columns 3 and 4). However, the coefficient on the interaction term with the deregulation index suggests that this negative impact was significantly mitigated in financially liberalized states.

Since individual house prices of households are not observable in the CES, we use statistics on a rent equivalence for home owners and rent payments for home renters as a measure of estimated home rent.[18] Furthermore, we use information on the lot size on which a household's house is located as a measure of estimated home size. Table A13 in Appendix shows the estimated effects of an exogenous increase in Chinese imports on the home rent and home size for all households, home owners, and home renters. The results suggest a significant negative impact of the China trade shock on the home rent for home owners but not for home renters, and a significant negative impact on the home size for all households. However, the estimated coefficients on the interaction term with the deregulation index indicate that these negative effects were significantly mitigated in states that deregulated their financial system further in the past.

4   Conclusion

This paper was set with the aim to examine the impact of the China trade shock on U.S. household income and consumption and the role of financial integration in mitigating this impact. The following conclusion can be drawn from the above analysis. First, we find that the growing import competition from China has negatively affected household income and consumption, and in particular housing consumption. However, this negative effect has been significantly mitigated in states that liberalized their financial sector earlier.

Second, we argue that an easier access to finance in more financially integrated states allowed households to better insure their consumption against idiosyncratic income

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[18]The rent equivalence is estimated by the households who owns a house with or without mortgage. The households are asked to provide a dollar amount for monthly rent, if someone were to rent their home today unfurnished and without utilities.

and price shocks caused by the Chinese imports. Therefore, we seek to explain the effect of the China trade shock on household consumption through its negative impact on both household income and state house prices. In fact, we find that the negative effect of Chinese imports on household consumption through the income and price channels has been significantly mitigated in states that were financially more integrated with the rest of the U.S. This result holds in particular for housing consumption.

Third, we estimate consumption risk sharing separately for home owners and home renters. We find that financial deregulation facilitated consumption smoothing through the income channel for both groups of households, while the price channel was most important for home owners, in particular for home owners with mortgages. The latter result indicates that financial deregulation helped to sustain the housing value of homeowners, which in turn allowed them to better insure their consumption against idiosyncratic income risk. Moreover, an easier access to finance in early deregulation states allowed homeowners with mortgages to better secure their mortgage payments against income and price shocks induced by the Chinese imports and therefore to better smooth their consumption over time.

This study also highlights areas for further research. In the first place, it would be interesting to test our hypothesis using longitudinal consumption data, e.g. from the Panel Study of Income Dynamics (PSID). This would allow us to estimate the changes in the impact of the China trade shock on household income and consumption, in particular housing consumption, and the changes in consumption risk sharing over time for a continual sample of households. Furthermore, the comprehensive household-level data from the CES and PSID would help to develop an appropriate measure of household wealth. This in turn would allow us to analyze the effects of trade and income shocks on household wealth, which could be more informative and conclusive. We strongly believe that the findings of the present thesis and our suggestions for further research would have a number of important implications for future economic policy.

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5 Figures and Tables

Figure 1: Average U.S. Household Income and Consumption
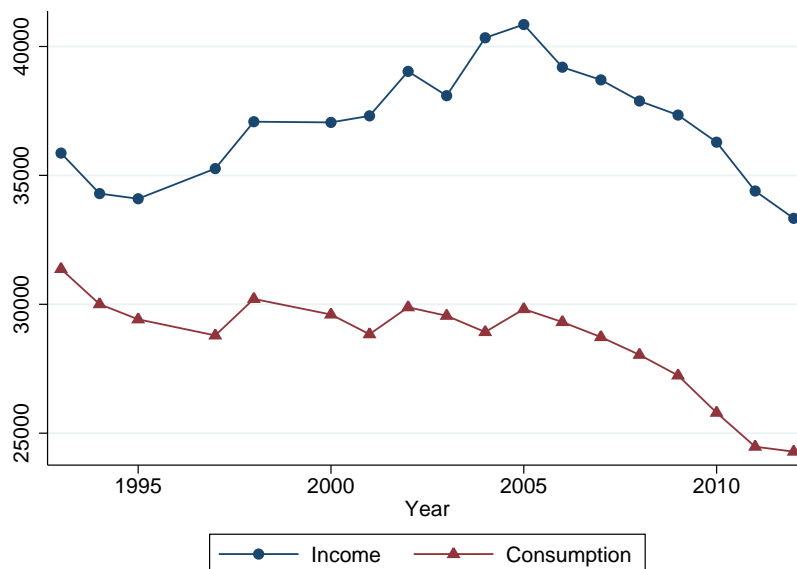
Notes: The figure depicts the evolution of average income after taxes and total expenditures per household member during the period from 1993 to 2012. The sample includes households with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. Income and expenditures are in 2007 U.S. Dollars and per household member calculated using adult equivalence scale. Data source: CEX, Interview Survey.

Figure 2: Average U.S. Household Income and Consumption: Early vs. Late Deregulation States
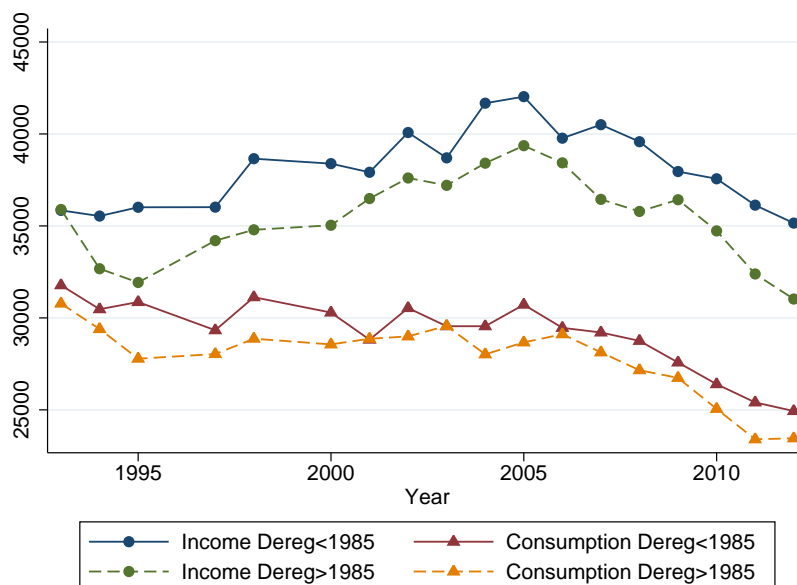
Notes: The figure depicts the evolution of average income after taxes and total expenditures per household member during the period from 1993 to 2012 for two samples of early and late deregulation states. The sample includes households with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. Income and expenditures are in 2007 U.S. Dollars and per household member calculated using adult equivalence scale. States that deregulated their banking sector before (after) 1985 are classified as early (late) deregulation states.

Figure 3: The Effect of Chinese Imports on U.S. Household Income and Consumption
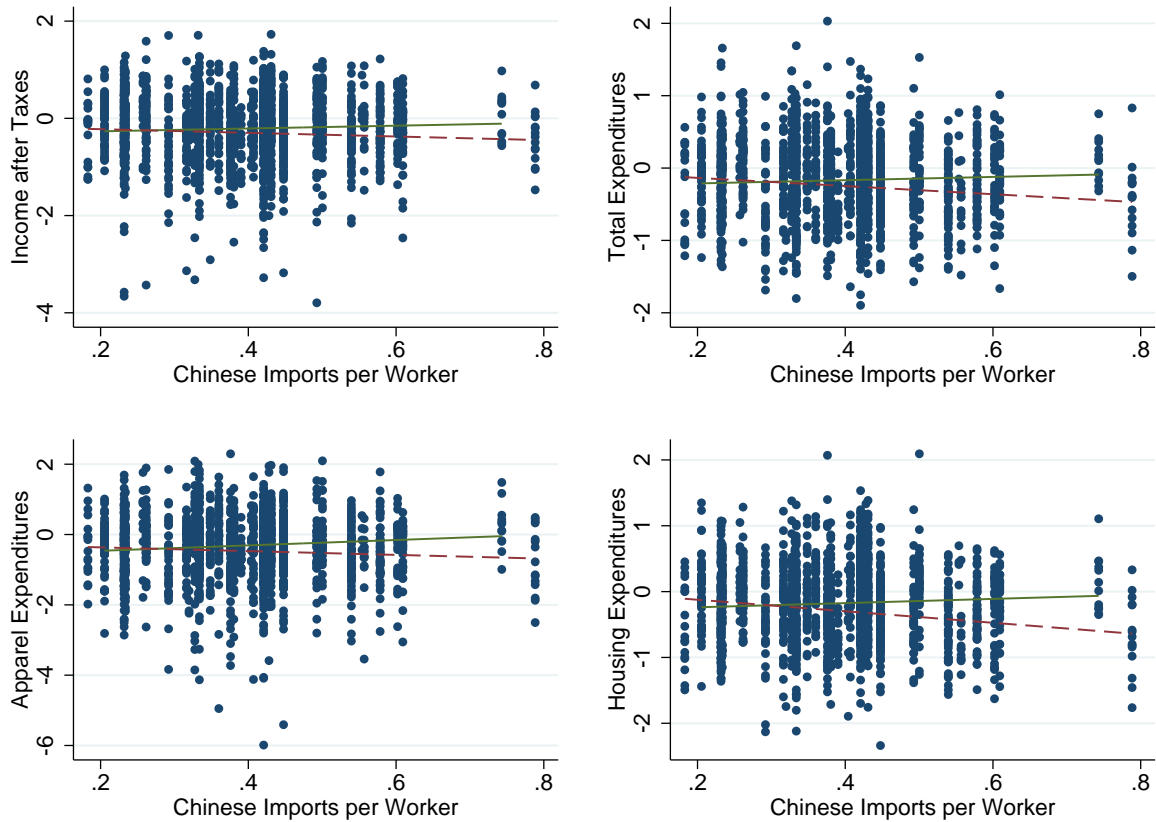
Notes: The figure depicts the relationship between Chinese import exposure per worker and average household income and expenditures in early and late deregulation states in 1995. The sample includes households with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. Income and expenditures are per household member (using adult equivalence scale) and log-demeaned (using US-wide averages). States that deregulated their banking sector before (after) 1985 are classified as early (late) deregulation states and denoted by the solid (dash) line.

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Figure 4: The Effect of Chinese Imports on U.S. Household Income and Consumption for Home Owners and Home Renters
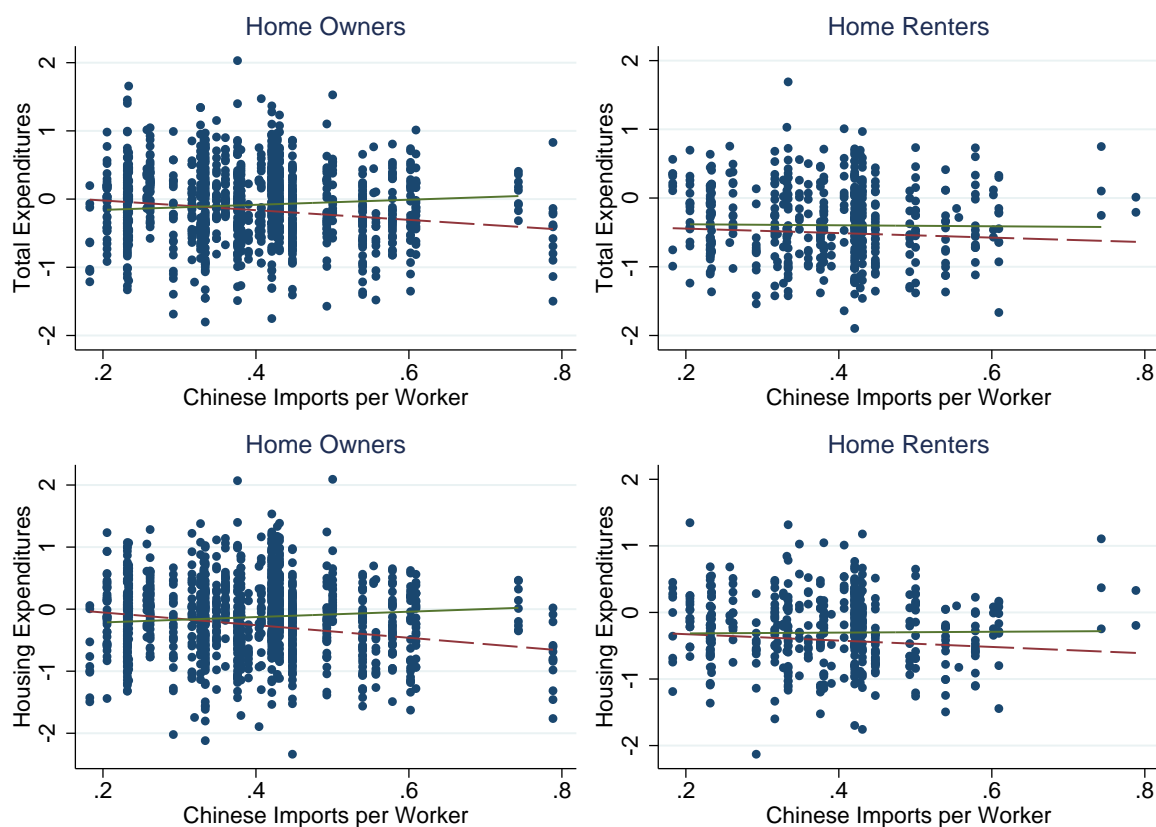
Notes: The figure depicts the relationship between Chinese import exposure per worker and average household expenditures for home owners and home renters in early and late deregulation states in 1995. The sample includes households with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. Income and expenditures are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). States that deregulated their banking sector before (after) 1985 are classified as early (late) deregulation states and denoted by the solid (dash) line.

Table 1: The Effect of Chinese Imports on U.S. Household Income

				Income after taxes				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Chinese Imports per Worker	0.0140	-0.0828**	-0.2024***	-0.2236***	-0.0216	-0.1230***	-0.2365***	-0.2635***
	(0.0302)	(0.0342)	(0.0683)	(0.0809)	(0.0270)	(0.0445)	(0.0717)	(0.0772)
Chinese Imports per Worker × Education		0.0219***	0.0212***	0.0211***		0.0222***	0.0215***	0.0215***
		(0.0067)	(0.0069)	(0.0069)		(0.0069)	(0.0071)	(0.0071)
Chinese Imports per Worker × Marital			0.0346**	0.0349**			0.0355**	0.0354**
			(0.0143)	(0.0165)			(0.0139)	(0.0162)
Chinese Imports per Worker × Urban			0.0979*	0.0971*			0.0910*	0.0907*
			(0.0537)	(0.0529)			(0.0529)	(0.0522)
Chinese Imports per Worker × Race				-0.0011				0.0039
				(0.0265)				(0.0243)
Chinese Imports per Worker × Age				0.0006				0.0006
				(0.0006)				(0.0006)
Chinese Imports per Worker × Sex				-0.0034				-0.0035
				(0.0190)				(0.0188)
Chinese Imports per Worker × Deregulation					0.0017**	0.0018**	0.0018**	0.0019***
					(0.0007)	(0.0007)	(0.0007)	(0.0007)
Observations	24641	24641	24641	24641	24641	24641	24641	24641
Adjusted R^2	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 2: The Effect of Chinese Imports on U.S. Household Consumption

	Total (1)	Food (2)	House (3)	Apparel (4)	Transportation (5)	Health (6)	Entertainment (7)	Education (8)
Chinese Imports per Worker	-0.1031***	-0.0277	-0.1299***	0.0578	0.0853	0.1164	-0.0604	-0.2169
	(0.0391)	(0.0377)	(0.0452)	(0.0944)	(0.1271)	(0.1199)	(0.0987)	(0.2222)
Chinese Imports per Worker × Deregulation	0.0012**	0.0005	0.0007	0.0035**	0.0019**	-0.0012	0.0001	0.0018
	(0.0006)	(0.0004)	(0.0008)	(0.0014)	(0.0010)	(0.0012)	(0.0008)	(0.0016)
Chinese Imports per Worker × Education	0.0094	0.0063	0.0053	-0.0006	-0.0014	0.0033	0.0067	0.0355**
	(0.0069)	(0.0041)	(0.0074)	(0.0056)	(0.0083)	(0.0112)	(0.0114)	(0.0155)
Chinese Imports per Worker × Marital	0.0077	0.0019	0.0021	-0.0157	0.0072	-0.0442*	-0.0110	0.0897**
	(0.0126)	(0.0091)	(0.0095)	(0.0209)	(0.0253)	(0.0267)	(0.0294)	(0.0420)
Chinese Imports per Worker × Urban	-0.0047	-0.0467*	0.0343	-0.1219	-0.0816	-0.0247	-0.0153	-0.0255
	(0.0241)	(0.0267)	(0.0348)	(0.0795)	(0.1070)	(0.0803)	(0.0677)	(0.1500)
Chinese Imports per Worker × Race	0.0116	0.0174	-0.0067	0.0717***	0.0073	-0.0059	0.0282	-0.0599
	(0.0180)	(0.0129)	(0.0157)	(0.0232)	(0.0224)	(0.0373)	(0.0326)	(0.0723)
Chinese Imports per Worker × Age	0.0008**	-0.0004	0.0015***	0.0000	0.0002	0.0014*	0.0010	-0.0010
	(0.0004)	(0.0004)	(0.0004)	(0.0009)	(0.0006)	(0.0008)	(0.0008)	(0.0026)
Chinese Imports per Worker × Sex	0.0132	0.0079	0.0181*	0.0206	-0.0161	0.0150	0.0056	0.0265
	(0.0109)	(0.0100)	(0.0100)	(0.0141)	(0.0128)	(0.0217)	(0.0194)	(0.0496)
Observations	24641	24641	24639	24345	24541	22982	24361	11286
Adjusted R^2	0.32	0.21	0.29	0.14	0.10	0.15	0.23	0.14

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 3: Estimation of U.S. Household Consumption Risk Sharing

| | Total Expenditures | | | | |
	(1)	(2)	(3)	(4)	(5)
Income after Taxes	0.4567***	0.6866***	0.7249***	0.6407***	0.6471***
	(0.0170)	(0.0809)	(0.0813)	(0.1046)	(0.1035)
Income after Taxes × Deregulation		-0.0203***	-0.0191***	-0.0183***	-0.0182***
		(0.0066)	(0.0062)	(0.0060)	(0.0059)
Income after Taxes × Education			-0.0125**	-0.0133***	-0.0134***
			(0.0053)	(0.0049)	(0.0049)
Income after Taxes × Marital				0.0178	0.0100
				(0.0241)	(0.0213)
Income after Taxes × Urban				0.0666	0.0698
				(0.0727)	(0.0781)
Income after Taxes × Race					-0.0081
					(0.0187)
Income after Taxes × Age					-0.0003
					(0.0007)
Income after Taxes × Sex					0.0247
					(0.0209)
Observations	24641	24641	24641	24641	24641
Adjusted R^2	0.58	0.58	0.58	0.58	0.58

Notes: This table reports OLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 4: Estimation of U.S. Household Consumption Risk Sharing in Various Consumption Categories

	Total (1)	Food (2)	House (3)	Apparel (4)	Transportation (5)	Health (6)	Entertainment (7)	Education (8)
Income after Taxes	0.6471***	0.1679***	0.5698***	0.1837	0.8723***	1.0961***	0.9847***	-0.0424
	(0.1035)	(0.0611)	(0.0749)	(0.1645)	(0.1962)	(0.2228)	(0.1516)	(0.2298)
Income after Taxes × Deregulation	-0.0182***	-0.0072*	-0.0204***	-0.0103	0.0011	-0.0176	-0.0281**	0.0116
	(0.0059)	(0.0038)	(0.0052)	(0.0081)	(0.0101)	(0.0150)	(0.0138)	(0.0131)
Income after Taxes × Education	-0.0134***	0.0041	0.0065	0.0146**	-0.0726***	-0.0973***	-0.0602***	-0.0723***
	(0.0049)	(0.0026)	(0.0051)	(0.0060)	(0.0110)	(0.0171)	(0.0101)	(0.0149)
Income after Taxes × Marital	0.0100	0.0107	0.0197	0.0788***	-0.0485	-0.1002**	0.0961***	0.1766**
	(0.0213)	(0.0125)	(0.0220)	(0.0221)	(0.0335)	(0.0448)	(0.0327)	(0.0676)
Income after Taxes × Urban	0.0698	0.0657	0.0597	0.0303	0.1614	0.1144*	0.1144	0.2863***
	(0.0781)	(0.0538)	(0.0505)	(0.1105)	(0.1569)	(0.0622)	(0.1226)	(0.0658)
Income after Taxes × Race	-0.0081	0.0263*	0.0105	0.0484*	-0.0970**	-0.0231	0.0238	-0.1604***
	(0.0187)	(0.0148)	(0.0171)	(0.0260)	(0.0374)	(0.0526)	(0.0398)	(0.0571)
Income after Taxes × Age	-0.0003	0.0013**	-0.0015*	0.0046***	-0.0029***	-0.0030***	-0.0015	0.0129**
	(0.0007)	(0.0005)	(0.0008)	(0.0011)	(0.0010)	(0.0010)	(0.0012)	(0.0048)
Income after Taxes × Sex	0.0247	0.0220	0.0362*	0.0253	0.0094	0.0031	0.0543*	-0.0405
	(0.0209)	(0.0147)	(0.0186)	(0.0251)	(0.0269)	(0.0310)	(0.0308)	(0.0639)
Observations	24641	24641	24639	24345	24541	22982	24361	11286
Adjusted R^2	0.58	0.34	0.46	0.23	0.22	0.19	0.36	0.18

Notes: This table reports OLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 5: The Effect of Chinese Imports on U.S. Household Consumption Controlling for Income and House Prices

	Total Expenditures				
	(1)	(2)	(3)	(4)	(5)
Chinese Imports per Worker	0.0173	0.0120	-0.0638	-0.0660	0.0367
	(0.0282)	(0.0270)	(0.0404)	(0.0409)	(0.0315)
Chinese Imports per Worker × Deregulation	0.0004	0.0003	-0.0004	-0.0006	-0.0009*
	(0.0004)	(0.0004)	(0.0007)	(0.0007)	(0.0005)
Chinese Imports per Worker × Education	-0.0004	-0.0006	0.0094	0.0096	-0.0005
	(0.0042)	(0.0037)	(0.0070)	(0.0069)	(0.0037)
Chinese Imports per Worker × Marital	-0.0085	-0.0086	0.0076	0.0073	-0.0089
	(0.0078)	(0.0077)	(0.0125)	(0.0125)	(0.0077)
Chinese Imports per Worker × Urban	-0.0461***	-0.0428***	-0.0065	-0.0136	-0.0492***
	(0.0086)	(0.0119)	(0.0223)	(0.0260)	(0.0136)
Chinese Imports per Worker × Race	0.0098	0.0103	0.0108	0.0112	0.0101
	(0.0103)	(0.0104)	(0.0177)	(0.0177)	(0.0103)
Chinese Imports per Worker × Age	0.0005*	0.0005*	0.0007**	0.0008**	0.0005*
	(0.0003)	(0.0003)	(0.0004)	(0.0004)	(0.0003)
Chinese Imports per Worker × Sex	0.0148**	0.0142**	0.0128	0.0123	0.0136*
	(0.0070)	(0.0072)	(0.0107)	(0.0106)	(0.0070)
Income after Taxes	0.4567***	0.6935***			0.6875***
	(0.0168)	(0.0793)			(0.0799)
Income after Taxes × Deregulation		-0.0209***			-0.0204***
		(0.0065)			(0.0065)
House Price Index			0.1917***	0.4009***	0.2806***
			(0.0680)	(0.0925)	(0.0832)
House Price Index × Deregulation				-0.0193***	-0.0140**
				(0.0064)	(0.0061)
Observations	24641	24641	24641	24641	24641
Adjusted R^2	0.58	0.58	0.32	0.32	0.58

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 6: The Effect of Chinese Imports on U.S. Household Consumption through the Income Channel

	Total (1)	Food (2)	House (3)	Apparel (4)	Transportation (5)	Health (6)	Entertainment (7)	Education (8)
Income after Taxes	0.8124***	0.3314***	0.7700***	-0.1309	0.6030***	0.8004**	1.3723***	0.7031
	(0.1106)	(0.1131)	(0.1509)	(0.2204)	(0.2094)	(0.3793)	(0.3155)	(0.4958)
Income after Taxes × Deregulation	-0.0174**	-0.0077	-0.0279***	0.0004	0.0091	-0.0196	-0.0388	0.0465
	(0.0087)	(0.0068)	(0.0099)	(0.0132)	(0.0212)	(0.0297)	(0.0239)	(0.0336)
Observations	24641	24641	24639	24345	24541	22982	24361	11286
Adjusted R^2	0.55	0.35	0.46	0.08	0.20	0.18	0.31	0.13

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 7: The Effect of Chinese Imports on U.S. Household Consumption through the Price Channel

	Total (1)	Food (2)	House (3)	Apparel (4)	Transportation (5)	Health (6)	Entertainment (7)	Education (8)
House Price Index	0.4017**	0.8365**	0.5196**	-0.0999	0.1475	-1.3527	-0.0791	-0.0761
	(0.1896)	(0.3845)	(0.2170)	(0.7493)	(0.4567)	(1.1996)	(0.5285)	(1.1868)
House Price Index × Deregulation	-0.0197***	-0.0185	-0.0265***	-0.0254	-0.0280	-0.0134	-0.0021	0.0106
	(0.0071)	(0.0321)	(0.0085)	(0.0514)	(0.0248)	(0.0782)	(0.0161)	(0.0419)
Observations	24641	24641	24639	24345	24541	22982	24361	11286
Adjusted R^2	0.31	0.19	0.30	0.14	0.09	0.12	0.20	0.12

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 8: The Effect of Chinese Imports on U.S. Household Consumption through the Income and Price Channels for Home Owners and Home Renters

Total Expenditures	Owners			Renters		
	(1)	(2)	(3)	(4)	(5)	(6)
Income after Taxes	0.7950***		0.6559***	0.6540***		0.6497***
	(0.1777)		(0.2367)	(0.0858)		(0.0893)
Income after Taxes × Deregulation	-0.0335***		-0.0289*	-0.0204***		-0.0201***
	(0.0129)		(0.0150)	(0.0070)		(0.0072)
House Price Index		0.3579**	0.1678		0.3326	0.1317
		(0.1711)	(0.1694)		(0.2306)	(0.1710)
House Price Index × Deregulation		-0.0218***	-0.0083		-0.0070	-0.0048
		(0.0074)	(0.0113)		(0.0148)	(0.0108)
Observations	17804	17804	17804	6837	6837	6837
Adjusted R^2	0.54	0.29	0.52	0.58	0.33	0.58

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 9: The Effect of Chinese Imports on U.S. Household Housing Consumption through the Income and Price Channels for Home Owners and Home Renters

Housing	Owners			Renters		
	(1)	(2)	(3)	(4)	(5)	(6)
Income after Taxes	0.8275***		0.7668***	0.4884***		0.4856***
	(0.2095)		(0.1544)	(0.0625)		(0.0652)
Income after Taxes × Deregulation	-0.0434***		-0.0311**	-0.0132**		-0.0130**
	(0.0154)		(0.0137)	(0.0053)		(0.0054)
House Price Index		0.6113***	0.3699**		0.2124	0.0598
		(0.1930)	(0.1755)		(0.1678)	(0.1171)
House Price Index × Deregulation		-0.0400***	-0.0251***		0.0023	0.0034
		(0.0103)	(0.0093)		(0.0114)	(0.0066)
Observations	17804	17804	17804	6835	6835	6835
Adjusted R^2	0.45	0.29	0.46	0.47	0.31	0.47

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 10: The Effect of Chinese Imports on U.S. Household Housing Consumption through the Income and Price Channels for Home Owners with and without Mortgage

Housing	Owners with Mortgage			Owners without Mortgage		
	(1)	(2)	(3)	(4)	(5)	(6)
Income after Taxes	0.6327***		0.6745***	0.6339***		0.6193***
	(0.2332)		(0.1246)	(0.1852)		(0.1916)
Income after Taxes $\times$ Deregulation	-0.0380**		-0.0239**	-0.0271*		-0.0259
	(0.0158)		(0.0113)	(0.0156)		(0.0161)
House Price Index		0.4859***	0.3228***		0.7935	0.5613
		(0.1291)	(0.1198)		(0.5147)	(0.4488)
House Price Index $\times$ Deregulation		-0.0363***	-0.0277***		-0.0502***	-0.0225
		(0.0086)	(0.0073)		(0.0166)	(0.0176)
Observations	14622	14622	14622	3182	3182	3182
Adjusted R^2	0.42	0.29	0.47	0.43	0.33	0.43

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table 11: The Effect of Chinese Imports on U.S. Household Mortgage Interest through the Income and Price Channels

Mortgage Interest	OLS			2SLS		
	(1)	(2)	(3)	(4)	(5)	(6)
Income after Taxes	0.7583***		0.7370***	1.0411***		0.8570***
	(0.1296)		(0.1338)	(0.1720)		(0.2050)
Income after Taxes $\times$ Deregulation	-0.0309**		-0.0290**	-0.0517***		-0.0399**
	(0.0117)		(0.0120)	(0.0163)		(0.0195)
House Price Index		0.5389***	0.4258***		0.7667***	0.6182***
		(0.0996)	(0.0846)		(0.2172)	(0.2314)
House Price Index $\times$ Deregulation		-0.0388***	-0.0332***		-0.0465***	-0.0322**
		(0.0105)	(0.0082)		(0.0129)	(0.0137)
Observations	14622	14622	14622	14622	14622	14622
Adjusted R^2	0.38	0.27	0.39	0.38	0.27	0.38

Notes: This table reports OLS and 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Appendix

Table A1: Summary Statistics

Variable	All States				Early Deregulation States				Late Deregulation States			
	Mean	SD	Min	Max	Mean	SD	Min	Max	Mean	SD	Min	Max
Deregulation Index	16.08	9.00	4	32	23.09	8.05	11	32	9.22	1.35	4	10
Chinese Imports per Worker	1.23	.84	.16	4.64	1.26	.82	.19	3.85	1.20	.86	.16	4.64
Instr. for Chinese Imports per Worker	.97	.65	.16	3.48	1.03	.66	.17	3.25	.91	.62	.16	3.48
Income before Taxes	39277	31543	0	578575	40376	33325	0	578575	38200	29656	17	365935
Income after Taxes	36185	28852	0	519890	37118	30350	0	519890	35271	27274	17	372381
Earnings	37379	30416	-20164	402627	38479	31962	-3957	402627	36300	28781	-20164	365935
Salary	35403	28726	0	365935	36340	30006	0	332282	34486	27383	0	365935
Total Expenditures	28134	18058	1960	507324	28573	18595	1960	507324	27703	17507	2324	357569
Food	3571	1906	144	38641	3653	2009	144	38641	3491	1796	312	30720
Housing	9097	6671	0	187795	9560	7062	0	186531	8643	6231	0	187795
Housing Shelter	5905	5006	0	109663	6370	5346	0	77246	5448	4604	0	109663
Housing Services	2293	1669	0	118118	2273	1558	0	23234	2312	1771	0	118118
Housing Equipment	899	1743	0	155972	916	2076	0	155972	882	1340	0	24961
Apparel	1008	1164	0	38648	1047	1185	0	27236	970	1141	0	38648
Transportation	5374	6157	0	96029	5272	6072	0	96029	5474	6237	0	75902
Health	1152	1359	0	25280	1090	1304	0	22751	1213	1407	0	25280
Entertainment	1498	2308	0	100487	1498	2322	0	100487	1499	2295	0	93486
Education	458	1640	0	51941	472	1646	0	28653	443	1634	0	51941
House Price Index	1.13	.28	.74	1.59	1.14	.28	.76	1.59	1.12	.28	.74	1.57
Home Value	1165	790	0	5922	1240	853	0	5922	1091	716	0	5922
Home Size	1.84	1.79	0	11	1.84	1.77	0	11	1.85	1.80	0	11
Mortgage Originated	134396	110902	86	845174	151865	127334	334	845174	117838	89594	86	747444

Notes: This table reports summary statistics of the variables used in the present study. The rotating panel sample includes 24,641 U.S. households that completed their interviews from 1993 to 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. Deregulation index equals number of years since the first year of deregulation. States that deregulated their banking sector before (after) 1985 are classified as early (late) deregulation states. All income and consumption variables are per year in 2007 U.S. Dollars and per household member calculated using adult equivalence scale.

Table A2: The Effect of Chinese Imports on U.S. Household Income before and after Taxes, Earnings, and Salary

	Income before taxes (1)	Income after taxes (2)	Earnings (3)	Salary (4)
Chinese Imports per Worker	-0.2703***	-0.2635***	-0.2778***	-0.2825***
	(0.0804)	(0.0772)	(0.0889)	(0.0951)
Chinese Imports per Worker × Deregulation	0.0016**	0.0019***	0.0022***	0.0019**
	(0.0006)	(0.0007)	(0.0008)	(0.0009)
Chinese Imports per Worker × Education	0.0212***	0.0215***	0.0210***	0.0236***
	(0.0079)	(0.0071)	(0.0079)	(0.0088)
Chinese Imports per Worker × Marital	0.0359**	0.0354**	0.0391**	0.0379**
	(0.0162)	(0.0162)	(0.0161)	(0.0162)
Chinese Imports per Worker × Urban	0.0602	0.0907*	0.0569	0.0495
	(0.0558)	(0.0522)	(0.0616)	(0.0710)
Chinese Imports per Worker × Race	0.0176	0.0039	0.0149	0.0205
	(0.0263)	(0.0243)	(0.0285)	(0.0255)
Chinese Imports per Worker × Age	0.0010*	0.0006	0.0010	0.0008
	(0.0006)	(0.0006)	(0.0006)	(0.0007)
Chinese Imports per Worker × Sex	-0.0029	-0.0035	-0.0076	-0.0004
	(0.0194)	(0.0188)	(0.0206)	(0.0209)
Observations	24641	24641	24583	24116
Adjusted R^2	0.29	0.28	0.26	0.24

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A3: The Effect of Chinese Imports on U.S. Household Housing Consumption

	Housing Total (1)	Shelter (2)	Services (3)	Equipment (4)
Chinese Imports per Worker	-0.1299***	-0.3034***	-0.1280**	-0.2752
	(0.0452)	(0.0805)	(0.0555)	(0.1952)
Chinese Imports per Worker × Deregulation	0.0007	0.0001	-0.0002	0.0035**
	(0.0008)	(0.0011)	(0.0005)	(0.0015)
Chinese Imports per Worker × Education	0.0053	0.0010	0.0128	0.0039
	(0.0074)	(0.0084)	(0.0084)	(0.0097)
Chinese Imports per Worker × Marital	0.0021	0.0110	0.0051	-0.0446
	(0.0095)	(0.0123)	(0.0111)	(0.0302)
Chinese Imports per Worker × Urban	0.0343	0.1983***	0.0098	0.1408
	(0.0348)	(0.0726)	(0.0108)	(0.1649)
Chinese Imports per Worker × Race	-0.0067	-0.0164	0.0171	0.0332
	(0.0157)	(0.0242)	(0.0112)	(0.0352)
Chinese Imports per Worker × Age	0.0015***	0.0025***	0.0012***	0.0016
	(0.0004)	(0.0005)	(0.0004)	(0.0010)
Chinese Imports per Worker × Sex	0.0181*	0.0125	0.0250**	0.0157
	(0.0100)	(0.0130)	(0.0118)	(0.0278)
Observations	24639	24615	24618	22624
Adjusted R^2	0.29	0.26	0.20	0.12

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A4: Estimation of U.S. Household Housing Consumption Risk Sharing

	Housing Total (1)	Shelter (2)	Services (3)	Equipment (4)
Income after Taxes	0.5698***	0.7552***	0.3634***	0.5096***
	(0.0749)	(0.1088)	(0.1017)	(0.1710)
Income after Taxes × Deregulation	-0.0204***	-0.0285***	-0.0105	-0.0062
	(0.0052)	(0.0076)	(0.0096)	(0.0139)
Income after Taxes × Education	0.0065	0.0105	-0.0136***	-0.0120
	(0.0051)	(0.0087)	(0.0040)	(0.0098)
Income after Taxes × Marital	0.0197	0.0109	0.0332	0.0583
	(0.0220)	(0.0256)	(0.0223)	(0.0419)
Income after Taxes × Urban	0.0597	-0.0269	0.1276**	0.1829*
	(0.0505)	(0.0322)	(0.0579)	(0.0966)
Income after Taxes × Race	0.0105	-0.0027	0.0140	0.0832***
	(0.0171)	(0.0241)	(0.0145)	(0.0298)
Income after Taxes × Age	-0.0015*	-0.0007	-0.0017**	-0.0015
	(0.0008)	(0.0011)	(0.0006)	(0.0019)
Income after Taxes × Sex	0.0362*	0.0192	0.0810***	0.0324
	(0.0186)	(0.0241)	(0.0170)	(0.0384)
Observations	24639	24615	24618	22624
Adjusted R^2	0.46	0.37	0.31	0.20

Notes: This table reports OLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A5: The Effect of Chinese Imports on U.S. Household Housing Consumption Controlling for Income and Prices

| | Housing | | | | |
	(1)	(2)	(3)	(4)	(5)
Chinese Imports per Worker	-0.0227	-0.0281	-0.0901**	-0.0923**	-0.0014
	(0.0492)	(0.0453)	(0.0439)	(0.0443)	(0.0453)
Chinese Imports per Worker × Deregulation	-0.0000	-0.0001	-0.0010	-0.0011	-0.0014**
	(0.0007)	(0.0006)	(0.0009)	(0.0008)	(0.0006)
Chinese Imports per Worker × Education	-0.0035	-0.0037	0.0052	0.0054	-0.0036
	(0.0051)	(0.0046)	(0.0075)	(0.0075)	(0.0046)
Chinese Imports per Worker × Marital	-0.0123	-0.0125	0.0020	0.0017	-0.0128
	(0.0090)	(0.0091)	(0.0093)	(0.0094)	(0.0091)
Chinese Imports per Worker × Urban	-0.0025	0.0008	0.0324	0.0254	-0.0056
	(0.0390)	(0.0372)	(0.0340)	(0.0341)	(0.0366)
Chinese Imports per Worker × Race	-0.0085	-0.0080	-0.0075	-0.0071	-0.0082
	(0.0103)	(0.0106)	(0.0153)	(0.0154)	(0.0107)
Chinese Imports per Worker × Age	0.0013***	0.0013***	0.0015***	0.0016***	0.0013***
	(0.0004)	(0.0004)	(0.0004)	(0.0004)	(0.0004)
Chinese Imports per Worker × Sex	0.0194***	0.0189**	0.0177*	0.0171*	0.0182**
	(0.0072)	(0.0074)	(0.0098)	(0.0097)	(0.0073)
Income after Taxes	0.4056***	0.6457***			0.6397***
	(0.0152)	(0.0655)			(0.0653)
Income after Taxes × Deregulation		-0.0212***			-0.0207***
		(0.0053)			(0.0053)
House Price Index			0.1939***	0.4030***	0.2881***
			(0.0731)	(0.1029)	(0.0774)
House Price Index × Deregulation				-0.0193***	-0.0139***
				(0.0071)	(0.0048)
Observations	24639	24639	24639	24639	24639
Adjusted R^2	0.46	0.47	0.29	0.29	0.47

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A6: First Stage Regressions - Income after Taxes

	Income after Taxes (1)	Income after Taxes×Deregulation (2)
Instrument for Chinese Imports per Worker	-0.7993***	-12.7906***
	(0.1644)	(2.2859)
Instrument for Chinese Imports per Worker × Deregulation	0.0400***	0.6786***
	(0.0116)	(0.2033)
Instrument for Chinese Imports per Worker × Education	0.0135	-0.1321
	(0.0118)	(0.2166)
Instrument for Chinese Imports per Worker × Marital	0.1377***	1.7646***
	(0.0290)	(0.3456)
Instrument for Chinese Imports per Worker × Urban	0.5478***	8.2989***
	(0.1252)	(1.6040)
Instrument for Chinese Imports per Worker × Race	0.0499	0.6333
	(0.0436)	(0.8096)
Instrument for Chinese Imports per Worker × Age	0.0018	0.0294
	(0.0012)	(0.0236)
Instrument for Chinese Imports per Worker × Sex	-0.0952***	-1.6999***
	(0.0221)	(0.3978)
Instrument for Chinese Imports per Worker × Education × Deregulation	0.0005	0.0326*
	(0.0006)	(0.0179)
Instrument for Chinese Imports per Worker × Marital × Deregulation	-0.0051***	-0.0813***
	(0.0010)	(0.0167)
Instrument for Chinese Imports per Worker × Urban × Deregulation	-0.0359***	-0.6011***
	(0.0099)	(0.1350)
Instrument for Chinese Imports per Worker × Race × Deregulation	-0.0018	-0.0261
	(0.0022)	(0.0654)
Instrument for Chinese Imports per Worker × Age × Deregulation	-0.0001	-0.0013
	(0.0001)	(0.0021)
Instrument for Chinese Imports per Worker × Sex × Deregulation	0.0052***	0.1242***
	(0.0011)	(0.0319)
Observations	24641	24641
Adjusted R^2	0.28	0.98
F(26, 24557)	157	213

Notes: This table reports OLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. Income after taxes is per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, the vector of household characteristics interacted with the deregulation index, as well as state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A7: First Stage Regressions - House Price Index

	House Price Index (1)	House Price Index×Deregulation (2)
Instrument for Chinese Imports per Worker	-0.2497***	-10.8966***
	(0.0694)	(1.9356)
Instrument for Chinese Imports per Worker × Deregulation	0.0111***	0.6735***
	(0.0017)	(0.0421)
Observations	24641	24641
Adjusted R^2	0.95	0.93
F(2, 41)	22	205

Notes: This table reports OLS estimates. All regressions include state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A8: The Effect of Chinese Imports on U.S. Household Housing Consumption through the Income Channel

	Housing Total (1)	Shelter (2)	Services (3)	Equipment (4)
Income after Taxes	0.7700***	0.6647***	0.9306***	0.9798***
	(0.1509)	(0.2072)	(0.1901)	(0.2844)
Income after Taxes × Deregulation	-0.0279***	-0.0369***	-0.0160	-0.0402**
	(0.0099)	(0.0138)	(0.0177)	(0.0180)
Observations	24639	24615	24618	22624
Adjusted R^2	0.46	0.35	0.11	0.20

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A9: The Effect of Chinese Imports on U.S. Household Housing Consumption through the Price Channel

	Housing Total (1)	Shelter (2)	Services (3)	Equipment (4)
House Price Index	0.5196**	0.7920***	-0.1021	0.7990
	(0.2170)	(0.2984)	(0.2903)	(0.7379)
House Price Index × Deregulation	-0.0265***	-0.0482***	-0.0084	-0.0327
	(0.0085)	(0.0161)	(0.0127)	(0.0272)
Observations	24639	24615	24618	22624
Adjusted R^2	0.30	0.27	0.20	0.12

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A10: The Effect of Chinese Imports on U.S. Household Housing Consumption through the Income and Price Channels for Home Owners and Home Renters

Shelter	Owners			Renters		
	(1)	(2)	(3)	(4)	(5)	(6)
Income after Taxes	1.4495***		1.0092***	0.5229***		0.5137***
	(0.3621)		(0.2140)	(0.1085)		(0.1109)
Income after Taxes × Deregulation	-0.0694***		-0.0465**	-0.0141		-0.0134
	(0.0261)		(0.0189)	(0.0089)		(0.0091)
House Price Index		1.0722**	0.7505*		0.3995***	0.2474**
		(0.4863)	(0.4402)		(0.1362)	(0.1082)
House Price Index × Deregulation		-0.0612***	-0.0402**		-0.0033	-0.0023
		(0.0220)	(0.0192)		(0.0119)	(0.0089)
Observations	17797	17797	17797	6818	6818	6818
Adjusted R^2	0.38	0.28	0.39	0.43	0.30	0.43

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A11: The Effect of Chinese Imports on U.S. Household Housing Consumption through the Income and Price Channels for Home Owners with and without Mortgage

Shelter	Owners with Mortgage			Owners without Mortgage		
	(1)	(2)	(3)	(4)	(5)	(6)
Income after Taxes	0.9898***		0.7703***	0.9689***		0.9238***
	(0.1906)		(0.1353)	(0.2550)		(0.2579)
Income after Taxes × Deregulation	-0.0527***		-0.0303**	-0.0471**		-0.0433*
	(0.0168)		(0.0123)	(0.0221)		(0.0224)
House Price Index		0.7945***	0.6051***		1.6754	1.3002
		(0.1951)	(0.1672)		(1.0935)	(1.1422)
House Price Index × Deregulation		-0.0484***	-0.0376***		-0.1099***	-0.0680*
		(0.0110)	(0.0100)		(0.0348)	(0.0360)
Observations	14622	14622	14622	3175	3175	3175
Adjusted R^2	0.41	0.28	0.41	0.40	0.33	0.40

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All income and consumption variables are per year and household member (using adult equivalence scale) and log-demeaned (using US-wide averages). All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A12: The Effect of Chinese Imports on U.S. Household Mortgage

	Mortgage Originated				
	(1)	(2)	(3)	(4)	(5)
Chinese Imports per Worker	-0.0283	-0.0936	-0.1565**	-0.2073**	-0.0217
	(0.0613)	(0.0576)	(0.0679)	(0.0887)	(0.1072)
Chinese Imports per Worker × Deregulation		0.0028*	0.0031***	0.0030***	0.0029***
		(0.0016)	(0.0011)	(0.0011)	(0.0010)
Chinese Imports per Worker × Education			0.0141*	0.0142*	0.0132
			(0.0085)	(0.0085)	(0.0082)
Chinese Imports per Worker × Marital				0.0060	0.0027
				(0.0192)	(0.0186)
Chinese Imports per Worker × Urban				0.0465	0.0261
				(0.0542)	(0.0556)
Chinese Imports per Worker × Race					-0.0837**
					(0.0333)
Chinese Imports per Worker × Age					-0.0021**
					(0.0009)
Chinese Imports per Worker × Sex					0.0194
					(0.0207)
Mortgage Term	0.7709***	0.7876***	0.7725***	0.7724***	0.7707***
	(0.0231)	(0.0220)	(0.0237)	(0.0236)	(0.0238)
Observations	16232	16232	16232	16232	16232
Adjusted R^2	0.31	0.32	0.31	0.31	0.31

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.

Table A13: The Effect of Chinese Imports on U.S. Household Home Rent and Home Size

	All		Owners		Renters	
	Home Rent (1)	Home Size (2)	Home Rent (3)	Home Size (4)	Home Rent (5)	Home Size (6)
Chinese Imports per Worker	-0.1526***	-0.9343***	-0.1431***	-0.9450**	-0.0745	-1.4407*
	(0.0264)	(0.3247)	(0.0278)	(0.4546)	(0.0453)	(0.7480)
Chinese Imports per Worker × Deregulation	0.0031***	0.0075***	0.0033**	0.0063**	0.0029***	0.0187**
	(0.0010)	(0.0027)	(0.0015)	(0.0029)	(0.0007)	(0.0074)
Observations	23136	13933	16342	12016	6794	1917
Adjusted R^2	0.34	0.31	0.34	0.32	0.21	0.29

Notes: This table reports 2SLS estimates. The rotating sample includes households that completed their interviews between 1993 and 2007, with positive income, food and non-food expenditures, and a reference person aged between 21 and 64. All regressions include the vector of household characteristics, state and year fixed effects and are weighted by BLS population weights. Robust standard errors in parentheses are clustered by state. *,**,*** indicate statistical significance at the 10%, 5%, 1% level respectively.