



The impact of COVID-19 pandemic on insurance demand: the case of China

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Abstract

The COVID-19 has been a worldwide pandemic and it needs for studies related to effect on people's demand for insurance during the pandemic which is an important way to transfer risk. However, there is a lack of research linking COVID-19 and people's demand for insurance. The objective of this paper is to investigate the impact of COVID-19 pandemic on issuance demand, using data covering 241 cities on confirmed COVID-19 cases and insurance company revenue in China. The empirical results show that more confirmed COVID-19 cases are associated with greater per capita insurance revenue and the results are robust when considering endogeneity concern. Economically, the per capita insurance revenue increases by 0.896 Yuan for each more confirmed case. In terms of insurance type, the greatest increased insurance revenue is for life insurance, followed by health insurance. We further consider the heterogeneity of regions and find that the impact of COVID-19 on insurance revenue only exists in regions with worse medical treatment conditions or higher medical burden.

Keywords COVID-19 · Confirmed cases · Insurance demand · Medical treatment conditions · Medical burden

JEL Classification G22 · I10 · I12

Introduction

COVID-19 has been a worldwide pandemic which will greatly affect people's behavior. Current studies have examined the impact of COVID-19 on people's investment [22], consumption [3, 7] and risk-taking behavior [4], but there is a lack of research linking COVID-19 and people's demand for insurance which is an important way to transfer risk. In this paper, we complement the literature by exploring the impact of confirmed COVID-19 cases on insurance demand, using city-level data from China.

When facing risk events, people have risk perception that influences their demand for insurance [11]. Higher risk perception can induce people to reduce risk-taking behavior and increase the demand for insurance [5]. Existing studies have shown that, when experiencing the risks of earthquake [19], hurricane and flood [21], and air pollution [6], people tend to increase their demand for insurance. However, we still have limited knowledge about the relationship between infectious

diseases and people's demand for insurance, and the outbreak of COVID-19 provides an appropriate scenario to explore the topic.

The theory of risk and insurance points out that the demand for insurance originates from people's risk perception of risk events [14]. As of June 22, 2021, there were more than 179.53 million confirmed COVID-19 cases worldwide, with over 3,888,330 deaths.¹ The COVID-19 pandemic is characterized by sudden outbreak [20, 23, 24] and damage to human lung [12], gastrointestinal system [23, 24], olfactory sensation [2] and pancreas [10], which causes the high infection rate [17] and morbidity [29] of COVID-19. Moreover, the factors that affect the incidence and severity of COVID-19 are not clear [15, 16] and there is no standard antibody test for detecting COVID-19 antibodies during or after exposure or infection [15, 16], which can lead to people's perception of the high risk of infection and even death, especially when there are confirmed cases in a local city [4]. People will make corresponding decisions on the risk perception to implement loss control [27], and one of the most important ways is to purchase insurance. We therefore conjecture that when local confirmed COVID-19 cases rise, people's demand for insurance

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will increase. Moreover, the risks of infectious diseases are mainly related to the medical treatment conditions and medical burden after infection and people will have higher risk perception when there are worse medical treatment conditions or higher medical burden. We further conjecture that the impact of COVID-19 on insurance demand is more pronounced in regions with worse medical treatment conditions or higher medical burden.

To test our conjecture, we use data on monthly city-level confirmed COVID-19 cases and insurance company revenue in China to examine the impact of COVID-19 on insurance demand and further investigate the role of regional medical treatment conditions and medical burden. Compared to existing literature, this paper not only expands the studies on the consequences of pandemic such as 1918 flu epidemic [13, 18] and 2009 influenza pandemic [1, 8], but also complements literature on the impact of COVID-19 from the perspective of insurance demand. Furthermore, as China was the first country to experience a large-scale outbreak of COVID-19, the results of this paper can provide a reference for other countries to implement corresponding insurance policies to overcome the shock of COVID-19.

Data, sample, and empirical specification

Data

In order to capture the shock of COVID-19 on insurance demand, we use the data of January and February 2020 in China as the outbreak of COVID-19 began from January 2020. Our sample contains two sets of data. The first is the monthly city-level cumulative insurance company revenue for January and February 2020 from the China Banking and Insurance Regulatory Commission (CBIRC).² The second is the monthly city-level cumulative confirmed COVID-19 cases for January and February 2020 from the database of the China Stock Market Accounting Research (CSMAR) and we also check the data through the official announcement of Health Committee of each province.³

We extract city-level economic variables from the Statistical Yearbook for each province. As the data in the Statistical Yearbook were last updated in 2018, the economic variables are constructed from the data at the end of 2018. After dropping cities with missing data, our sample includes 482 observations from 241 cities in 22 provinces.⁴

² The website is <http://www.cbirc.gov.cn>. According to the data from the CBIRC, there are 235 insurance companies by 2019 in China and the total asset is 20560 billion Yuan, with 4264.45 billion Yuan gross premium income and 49.54 billion insurance policies.

³ The website of the database is <http://www.gtarsc.com>.

⁴ Due to missing data on monthly insurance revenue, our sample does not include cities in Hubei Province, where is the center of the outbreak of COVID-19 in China.

Model specification and variable definition

The basic regression model is as follows:

$$\text{Insure_cum}_{it} = \alpha_0 + \alpha_1 \text{Case_cum}_{it} + \alpha_2 \text{Control} + \text{Fixed effects} + \varepsilon_{it}. \quad (1)$$

In the model, the dependent variable *Insure_cum* is the cumulative per capita insurance revenue for January and February 2020, and we also define the added per capita insurance revenue in February 2020 compared to January 2020 (*Insure_add*) for robustness test. Furthermore, insurances in China are divided into four categories that are property insurance, life insurance, accident insurance, and health insurance, and then we also decompose *Insure_cum* into four variables—per capita revenue in property insurance (*Property*), life insurance (*Life*), accident insurance (*Accident*), and health insurance (*Health*)—to examine the impact of COVID-19 on different types of insurance demand.

As people show the phenomenon of probability neglecting when facing major disaster events, that is, people pay more attention to the serious consequences of events, but are not sensitive to the probability of their occurrence [28], we measure *Case_cum* as the number of cumulative confirmed COVID-19 cases for January and February 2020 in the city, and we also calculate the number of added confirmed COVID-19 cases in February 2020 compared to January 2020 (*Case_add*) for the regression on *Insure_add*.

The variable *Control* includes per capita GDP (*GDP*), per capita disposable income (*Income*), and per capita household savings (*Deposit*) for each city at the end of 2018. Considering the effect of the lockdown on the spread of COVID-19 [9, 26], we add the lockdown status of the city (*Lockdown*, a dummy variable that equals one if the city is in lockdown during the month, and zero otherwise) to the model. As there are city-level time-invariant variables in the model, we cannot control for city fixed effect, and then we control for province fixed effect (*Province*). We also control for month fixed effect (*Month*) to eliminate their potential influence.

Summary statistics

The summary statistics for the main variables are reported in Table 1. The mean value of *Insure_cum* is 639.427, indicating that the cumulative per capita insurance revenue is, on average, 639.427 Yuan. The statistical results pertaining to the four types of insurances show that life insurance accounts for the most of total insurance (461.795 Yuan) and accident insurance accounts for the least (8.236 Yuan). The results of *Case_cum* show that on average there are cumulative 30.471 confirmed cases in the sample cities during the first 2 months of 2020. Moreover, the results of *Insure_add* and *Case_add* show that compared to January 2020, there is an average increase of 157.804 Yuan in per capita insurance

Table 1 Summary statistics

Variables	Observations	Mean	Median	25th	75th	STD
<i>Insure_cum</i> (Yuan)	482	639.427	506.788	350.478	759.182	461.579
<i>Insure_add</i> (Yuan)	241	157.804	119.347	92.288	193.347	120.105
<i>Property</i> (Yuan)	482	96.952	72.797	49.538	119.286	73.916
<i>Life</i> (Yuan)	482	461.795	366.809	245.146	552.627	350.367
<i>Accident</i> (Yuan)	482	8.236	5.754	3.893	9.402	7.664
<i>Health</i> (Yuan)	482	72.444	61.881	37.162	92.453	57.416
<i>Case_cum</i>	482	30.471	11.500	4.000	30.000	60.795
<i>Case_add</i>	241	28.585	11.000	3.000	31.000	48.989
<i>GDP</i> (hundred Yuan)	482	602.792	481.781	327.711	754.454	397.185
<i>Income</i> (hundred Yuan)	482	276.010	244.490	208.680	322.450	98.364
<i>Deposit</i> (hundred Yuan)	482	425.993	376.291	280.393	552.115	218.910
<i>Lockdown</i>	482	0.120	0.000	0.000	0.000	0.326

This table presents the summary statistics of the main variables. *Insure_cum* is the cumulative per capita insurance revenue for January and February 2020. *Insure_add* is the added per capita insurance revenue in February 2020 compared to January 2020. *Property* is the cumulative per capita property insurance revenue. *Life* is the cumulative per capita life insurance revenue. *Accident* is the cumulative per capita accident insurance revenue. *Health* is the cumulative per capita health insurance revenue. *Case_cum* is the number of cumulative confirmed COVID-19 cases for January and February 2020 in the city. *Case_add* is the number of added confirmed cases in the city in February 2020 compared to January 2020. *GDP* is the per capita GDP of the city in 2018. *Income* is the per capita disposable income of the city in 2018. *Deposit* is the per capita household savings of the city in 2018. *Lockdown* is a dummy variable that equals one if the city is in lockdown during the month, and zero otherwise

revenue and an increase of 28.585 confirmed COVID-19 cases in February 2020.

Regarding the control variables, the mean value for *GDP* is 602.792, indicating that, on average, the per capita GDP of sample cities is about 603 hundred Yuan. The results of *Income* and *Deposit* show that on average the per capita disposable income is about 276 hundred Yuan and the per capita household savings is about 426 hundred Yuan. Finally, the results of *Lockdown* indicate that 12% of cities in the sample have been in lockdown.

To capture the relationship between confirmed COVID-19 cases and insurance demand directly, we draw the scatter diagram and fitted lines for *Insure_cum* and *Case_cum*, and for *Insure_add* and *Case_add*, respectively. In Fig. 1, we can see an obvious positive relationship between confirmed COVID-19 cases and insurance demand, whether cumulative or added, which provide preliminary evidence for the impact of COVID-19 on insurance demand.

COVID-19 and insurance demand

Baseline regressions

The baseline results are presented in Table 2. We employ the ordinary least squares regression with heteroskedasticity consistent standard errors and examine the impact of confirmed COVID-19 cases on insurance demand. In

Model (2), *Insure_cum* is regressed on *Case_cum* and control variables. In Model (4), *Insure_add* is regressed on *Case_add* and control variables.

In Model (2), we find that *Case_cum* is positively and significantly related to *Insure_cum* at the 5% level, as is the impact of *Case_add* on *Insure_add* in Model (4). The results indicate that the per capita insurance revenue is higher when there are more confirmed COVID-19 cases. Concerning the magnitude of the coefficients, the cumulative per capita insurance revenue will increase by 0.896 Yuan for each cumulative confirmed case, while the added per capita insurance revenue will increase by 0.308 Yuan for each additional confirmed case. As the mean value of *Insure_cum* and *Insure_add* are 639.427 Yuan and 157.804 Yuan, respectively, the results indicate that for each cumulative confirmed case, the cumulative per capita insurance revenue will on average increase by 0.140%, and for each added confirmed case, the added per capita insurance revenue will on average increase by 0.195%.

Concerning the control variables, the coefficients of *Income* and *Deposit* indicate that higher per capita income and household savings will significantly increase insurance revenue, including cumulative and added per capita insurance revenue. The coefficient of *GDP* is positive at the 1% level in Model (2), indicating that per capita GDP can promote cumulative per capita insurance revenue. The results of *Lockdown* show that a city's lockdown status can significantly increase added per capita insurance revenue.

Fig. 1 Confirmed COVID-19 cases and insurance demand. The triangles represent the relationship between *Case_cum* and *Insure_cum*, and the solid line is the fitted line. The circles show the relationship between *Case_add* and *Insure_add*, and the dash line is the fitted line

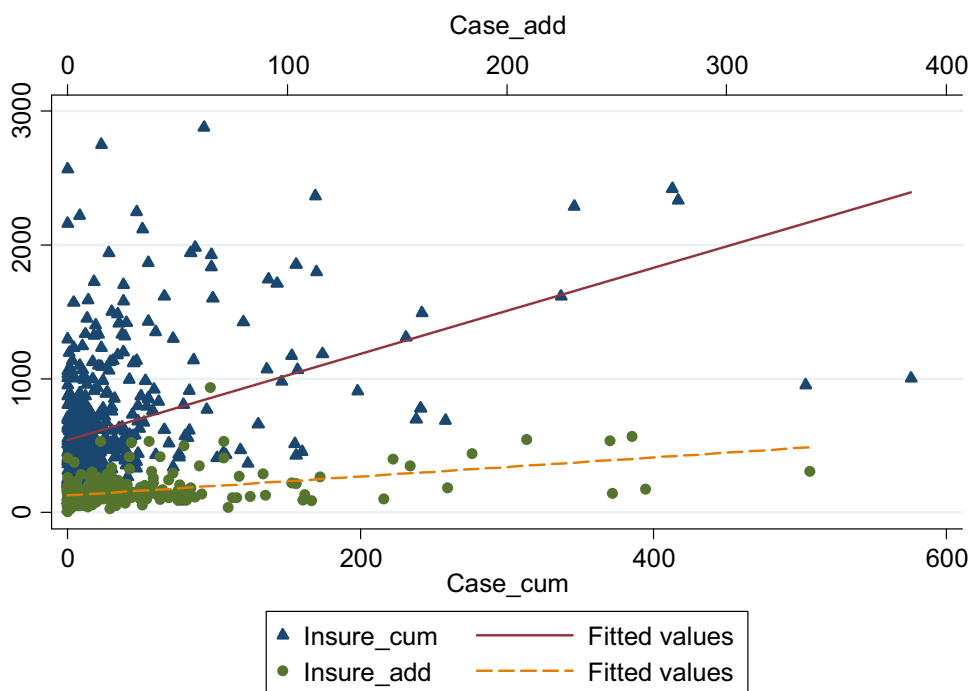


Table 2 COVID-19 and insurance demand

Variables	<i>Insure_cum</i>		<i>Insure_add</i>	
	(1)	(2)	(3)	(4)
<i>Case_cum</i>	3.380*** (0.712)	0.896** (0.362)		
<i>Case_add</i>			1.033*** (0.311)	0.308** (0.137)
<i>GDP</i>		0.275*** (0.074)		0.018 (0.024)
<i>Income</i>		1.424*** (0.380)		0.426*** (0.102)
<i>Deposit</i>		0.760*** (0.174)		0.168*** (0.042)
<i>Lockdown</i>		68.020 (52.466)		36.004** (15.561)
<i>Month</i>	Y	Y	–	–
<i>Province</i>	Y	Y	Y	Y
<i>Observations</i>	482	482	241	241
<i>R-squared</i>	0.433	0.828	0.455	0.722

This table presents the impact of confirmed COVID-19 cases on insurance demand. The dependent variables in Model (1) and (2) are the cumulative per capita insurance revenue for January and February 2020 (*Insure_cum*), and the independent variables are *Case_cum*, *GDP*, *Income*, *Deposit*, and *Lockdown*. The dependent variables in Model (3) and (4) are the added per capita insurance revenue in February 2020 compared to January 2020 (*Insure_add*), and the independent variables are *Case_add*, *GDP*, *Income*, *Deposit*, and *Lockdown*. The detailed definitions of variables are available in Table 1. The heteroskedasticity consistent standard errors are reported in the parentheses. ** and *** indicate statistical significance at the 5%, and 1% levels, respectively

Endogeneity concern

Our main variable of interest, *Case_cum*, may not be random. For example, if confirmed COVID-19 cases and per capita insurance revenue are jointly determined by other omitted variables such as local health habit, our baseline regression results are subject to an omitted variable bias. We therefore use the two-stage-least-square (2SLS) instrument variable approach to address the endogeneity concern.

We choose the ratio of people from Wuhan City to all people entering the city on January 1, 2020 (*WuhanRatio*) as instrument variable (IV) for *Case_cum* and *Case_add*. As Wuhan was the first city to experience a COVID-19 outbreak in China, we argue that if the city had more people from Wuhan on January 1, 2020, there would be more confirmed COVID-19 cases in the city, including cumulative confirmed cases for January and February 2020 and added confirmed cases in February 2020. Moreover, the ratio of people from Wuhan on January 1, 2020 to the city is just the situation of one day which would not be directly related to monthly per capital insurance revenue of the city.

We obtain the data of *WuhanRatio* from the CSMAR database. In the first stage, we regress the *Case_cum* and *Case_add* on IV, respectively, and in the second stage, we use *Case_cum_p* and *Case_add_p* as our two key independent variables, which are the predicted value of *Case_cum* and *Case_add*, respectively.

The results are presented in Table 3. In the first stage, we find that *WuhanRatio* is positively and significantly related to *Case_cum* and *Case_add* at the 1% level, respectively,

Table 3 COVID-19 and insurance demand: endogeneity concern

Variables	<i>Case_cum_p</i> 1st stage	<i>Insure_cum</i> 2nd stage	<i>Case_add_p</i> 1st stage	<i>Insure_add</i> 2nd stage
<i>Case_cum</i>				
<i>WuhanRatio</i> (%)	3.917*** (0.849)		3.095*** (0.905)	
<i>Case_cum_p</i>		4.258*** (0.813)		
<i>Case_add</i>				2.451*** (0.829)
<i>GDP</i>	-0.021 (0.014)	0.337*** (0.091)	-0.012 (0.012)	0.042 (0.034)
<i>Income</i>	0.298*** (0.067)	0.427 (0.458)	0.198*** (0.047)	0.246 (0.213)
<i>Deposit</i>	-0.007 (0.014)	0.771*** (0.177)	-0.009 (0.020)	0.182*** (0.058)
<i>Lockdown</i>	41.182*** (12.743)	73.734 (70.315)	35.867*** (7.157)	44.232** (22.091)
<i>Cragg-Donald Wald F statistic</i>	25.272		21.710	
<i>Month</i>	Y	Y	-	-
<i>Province</i>	Y	Y	Y	Y
<i>Observations</i>	482	482	241	241
<i>R-squared</i>	0.597	0.744	0.605	0.504

This table presents the results using the two-stage-least-square approach. In the first stage, we regress the *Case_cum* and *Case_add* on instrument variable *WuhanRatio*, respectively, which is the ratio of people from Wuhan City to all people entering the city on January 1, 2020, and the data are obtained from the CSMAR database. In the second stage, we use *Case_cum_p* and *Case_add_p* as our key independent variable, which are the predicted value of *Case_cum* and *Case_add*, respectively. The other independent variables are *GDP*, *Income*, *Deposit*, and *Lockdown*. The detailed definitions of variables are available in Table 1. The heteroskedasticity consistent standard errors are reported in the parentheses. ** and *** indicate statistical significance at the 5%, and 1% levels, respectively

and the two *Cragg-Donald Wald F statistics* of > 20 alleviate weak instrument variable concerns. We also regress *Insure_cum* and *Insure_add* on *WuhanRatio*, respectively, and find that *WuhanRatio* is insignificantly related to both *Insure_cum* and *Insure_add*. In the second stage, we find that the estimated coefficients for both *Case_cum_p* and *Case_add_p* are positively and statistically significant at the 1% level, suggesting that our results are robust when considering endogeneity concern.

Types of insurance

We also examine the impact of COVID-19 on the demand for four types of insurance. The results of Table 4 show that

Table 4 COVID-19 and insurance demand: types of insurance

Variables	Property	Life	Accident	Health
<i>Case_cum</i>	0.205** (0.097)	0.448** (0.206)	0.036** (0.015)	0.208** (0.094)
<i>GDP</i>	0.003 (0.016)	0.256*** (0.069)	0.001 (0.001)	0.015 (0.010)
<i>Income</i>	0.343*** (0.077)	0.934*** (0.307)	0.031*** (0.006)	0.117** (0.054)
<i>Deposit</i>	0.100*** (0.037)	0.569*** (0.121)	0.009*** (0.002)	0.081*** (0.031)
<i>Lockdown</i>	16.742** (8.338)	43.219 (40.856)	0.739 (0.764)	7.319 (7.531)
<i>Month</i>	Y	Y	Y	Y
<i>Province</i>	Y	Y	Y	Y
<i>Observations</i>	482	482	482	482
<i>R-squared</i>	0.730	0.819	0.788	0.650

This table presents the impact of confirmed COVID-19 cases on the demand of four types of insurances. The dependent variables are four types of insurance revenue for January and February 2020 (*Property*, *Life*, *Accident* and *Health*), and the independent variables are *Case_cum*, *GDP*, *Income*, *Deposit*, and *Lockdown*. The heteroskedasticity consistent standard errors are reported in the parentheses. ** and *** indicate statistical significance at the 5%, and 1% levels, respectively

Case_cum is positively and significantly related to all four variables at the 5% level, indicating that COVID-19 has a general impact on insurance demand. According to the coefficients, for each confirmed case, the per capita life insurance revenue increases by 0.448 Yuan (accounts for half of the total increase), followed by health insurance (0.208 Yuan), property insurance (0.205 Yuan), and accident insurance (0.036 Yuan). The results reveal that when local confirmed COVID-19 cases increase, people will have a greater perception of risk and worry more about their life and health.

Regarding control variables, *GDP* is only significantly related to *Life* while *Lockdown* is only significantly related to *Property*, indicating that cities with more per capita GDP have more life insurance and the lockdown of a city can increase property insurance. Both *Income* and *Deposit* are positive and significant in all regressions, indicating that per capita income and household savings can increase demand for four types of insurance. According to the coefficients, the most increase is life insurance, followed by property insurance, health insurance and accident insurance.

Heterogeneity analysis

To examine our second conjecture, we divide the whole sample into two subsamples according to the sample median of provincial medical treatment conditions and medical burden, respectively. We extract the data from the China Health Statistical Yearbook for each province. As the data in the

Table 5 COVID-19 and insurance demand: heterogeneity analysis

Variables	<i>Insure_cum</i>		<i>Insure_cum</i>	
	Higher incidence	Lower incidence	More tertiary hospitals	Fewer tertiary hospitals
Panel A: The role of medical treatment conditions				
<i>Case_cum</i>	0.695*** (0.241)	0.586 (0.566)	0.740 (0.509)	1.271*** (0.400)
<i>Other variables in Table 2</i>	Y	Y	Y	Y
<i>Observations</i>	214	268	222	260
<i>R-squared</i>	0.894	0.774	0.837	0.852
Variables	<i>Insure_cum</i>		<i>Insure_cum</i>	
	Higher medical expense	Lower medical expense	More social insurance	Fewer social insurance
Panel B: The role of medical burden				
<i>Case_cum</i>	1.865*** (0.412)	0.614 (0.443)	0.634 (0.408)	1.931*** (0.481)
<i>Other variables in Table 2</i>	Y	Y	Y	Y
<i>Observations</i>	234	248	238	244
<i>R-squared</i>	0.827	0.835	0.807	0.832

This table presents the role of provincial medical treatment conditions and medical burden on the relationship between confirmed COVID-19 cases and insurance demand. The dependent variable is the monthly cumulative per capita insurance revenue for January and February 2020 (*Insure_cum*), and the independent variables are same as those of Model (2) in Table 2. The sample is divided by the sample median of the incidence of infectious diseases, the number of per capita tertiary hospitals, the ratio of per capita medical expense to per capita disposable income, and the per capita social medical insurance expenditure of the province in 2018, respectively. The data of above four grouping variables are obtained from the China Health Statistical Yearbook. The heteroskedasticity consistent standard errors are reported in the parentheses. *** indicates statistical significance at the 1% level

Yearbook were last updated in 2018, the grouping variables are constructed from the data at the end of 2018.

We measure medical treatment conditions using the incidence of infectious diseases and the number of per capita tertiary hospitals (the highest level in China), respectively. The subgroup *Higher Incidence* refers to the group with higher incidence of infectious diseases than the sample median, and *Lower Incidence* refers to the group with lower incidence of infectious diseases than the sample median. The definition method also applies to *More Tertiary Hospitals* and *Fewer Tertiary Hospitals*. The higher incidence and fewer tertiary hospitals indicate worse medical treatment conditions.

From the results of Panel A in Table 5, we find that *Case_cum* is positive and significant at the 1% level in the subsamples of *Higher Incidence* and *Fewer Tertiary Hospitals*, but is insignificant in the subsamples of *Lower Incidence* and *More Tertiary Hospitals*. According to the coefficients, the per capita insurance revenue will increase by 0.695 Yuan and 1.271 Yuan for each confirmed case in provinces with higher incidence of infectious diseases and fewer tertiary hospitals, respectively.

We measure medical burden using the ratio of per capita medical expense to per capita disposable income, and the

per capita social medical insurance expenditure, respectively. The subgroup *Higher Medical Expense* refers to the group with higher ratio of per capita medical expense to per capita disposable income than the sample median, and *Lower Medical Expense* refers to the group with lower ratio than the sample median. The definition method also applies to *More Social Insurance* and *Fewer Social Insurance*. A higher ratio of medical expense and fewer social medical insurance expenditure indicate higher medical burden for local people.

The results of Panel B in Table 5 indicate that *Case_cum* is positive and significant at the 1% level in the subsamples of *Higher Medical Expense* and *Fewer Social Insurance* but is insignificant in the subsamples of *Lower Medical Expense* and *More Social Insurance*. Concerning the magnitude of the coefficients, the per capita insurance revenue will increase by 1.865 Yuan and 1.931 Yuan for each confirmed case in provinces with higher medical expense and fewer social medical insurance expenditure, respectively.

The above results suggest that in regions with better medical treatment conditions or lower medical burden, people's perception of COVID-19 risk is lower and the increase of confirmed cases cannot significantly affect their

insurance demand. On the contrary, in regions with worse medical treatment conditions or higher medical burden, people are more likely to worry about medical treatment and expenditure if infected, so demand for insurance increases. These results provide supporting evidence for our second conjecture.

Discussion and conclusion

As an important way for people to transfer risk, the purchase of insurance is related to the life of individuals and households, especially when major diseases occur, the insurance will become a safeguard mechanism for people. The outbreak and spread of COVID-19 pandemic in 2020 promote people to pay more attention to their health, which will increase the demand for insurance, especially health-related insurance. Moreover, many insured people needed to see a doctor but could not because of out-of-pocket cost in US [25], but in China, there is no out-of-pocket cost for insured people except for the deductible which is usually 10 thousand Yuan for medical insurance for 1 million Yuan insured amounts. According to the data from the CBIRC, there are 239 insurance companies by 2020 in China, with an increase of 4 insurance companies compared to 2019. The gross premium income in 2020 is 4525.73 billion Yuan, with an increase of 6.13% compared to 2019 (4264.45 billion Yuan). And there are 52.63 billion insurance policies in 2020, with an increase of 6.24% compared to 2019 (49.54 billion policies).

Specifically, although there is a large recent literature on the economic consequences of COVID-19, there is a lack of research about its impact on insurance demand. By employing data on city-level confirmed COVID-19 cases and insurance company revenue in China, this paper examines the impact of COVID-19 on insurance demand and further investigates the role of regional medical treatment conditions and medical burden.

The results show that confirmed COVID-19 cases can effectively increase per capita insurance revenue, and the results are robust when considering endogeneity concern. Economically, the per capita insurance revenue increases by 0.896 Yuan for each more confirmed case. In terms of insurance type, the greatest increased insurance revenue is for life insurance, which accounts for half of the total increase, followed by health insurance. In addition, the impact of COVID-19 on insurance demand only exists in regions with worse medical treatment conditions or higher medical burden.

Collectively, the findings of this paper indicate that the authority should pay more attention to the role of insurance in dealing with the negative impact of COVID-19 and instruct insurance companies to design special insurance

products, especially for life insurance and health insurance. Moreover, the authority should also consider the heterogeneity of medical situation in different regions and implement preferential insurance policies, which would effectively support people to resist the shock of COVID-19.

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