

**PHBS**  
**Peking University HSBC Business School**  
University Town, Nanshan District  
Shenzhen, 518055 China

# PHBS MAGAZINE

Peking University  
HSBC Business School

## LEARN GLOBALLY WITH CHINA'S INSIGHTS FROM OUR CROSS-BORDER STUDY PROGRAM

### The PHBS UK Campus:

- Offering master's programs in management and finance
- Two-year cross-border programs
- An opportunity to develop networks between the UK and China, particularly, with one of the most innovative cities in the world - Shenzhen



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Peking University HSBC Business School



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北大汇丰

Fifth Issue



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## PHBS MAGAZINE

PHBS Magazine is published by Peking University HSBC Business School

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## NEWS BRIEFINGS

### 1 PHBS Welcomes New Faculty

Eight new faculty members joined PHBS in the 2021 fall semester. They will bring experience to guide student-centered learning, and engage in high-impact research. The school now has 78 full-time professors with doctoral degrees from leading universities around the world. Since its foundation, PHBS has worked to integrate the best educational resources by attracting talented faculty from home and abroad. With such diversity, PHBS is ready to empower its students to excel inside and outside the classroom and will attract more of the world's best minds.



### 2 PHBS Holds 2021 Opening Ceremony

Following orientation activities, PHBS welcomed students at its opening ceremony on September 8. Over 300 full-time masters and Ph.D. students attended the event, which was livestreamed for new international students to watch from their respective countries. The ceremony began with a short film detailing students' training and outdoor activities,

highlighting their memorable experiences and challenges at the camp. Later, having practiced for days, students from PHBS' s different fields of research were divided into 24 groups to showcase their talent and skills through creative productions, including choreographed performances and choruses.

### 3 PHBS UK Campus Holds 7th International Young Finance Scholars' Conference

The PHBS UK Campus held the 7th International Young Finance Scholars' (IYFS) Conference this summer. Inaugurated in 2014, the conference aims to help young scholars develop the skills needed to publish academic papers and seek employment in the dynamic and challenging environment of financial markets and finance education. This year's online event featured seven sections with six panels in each section, attracting over 186 young scholars worldwide to present papers and exchange views. There was a record high of submissions from all over the world, making the event truly international. This meeting also allowed the young scholars to gain insights from leading researchers and editors of key finance journals. Professor Thomas J. Sargent, 2011 Nobel Laureate in Economics and the director of the Sargent Institute of Quantitative Economics and Finance at PHBS, delivered the keynote speech about his ongoing research on the fiscal and monetary policy of the US since its founding, and its impact on the global financial markets under various presidents and global events.



### 4 PHBS UK Campus Holds the Opening Ceremony and Mid-Autumn Festival Celebration

On the mid-autumn afternoon, the PHBS UK Campus had the chance to gather as one family to welcome our new students to the new academic year. All the speakers at the ceremony – faculty, business mentors, and research sponsors – had one take home message for the students: you are here to learn to change the world for the better. The first time gathering as one family since the pandemic began in 2019, it was truly a lovely sight to behold, as everyone interacted with a respectful social distance and with the eagerness of interacting in-person.

# NEWS BRIEFINGS



## 5 PHBS Alumni Homecoming Day 2021

PHBS held its homecoming day on November 6, which featured a lecture given by Professor Hai Wen, and various activities arranged by different programs including class reunions, alumni talks, and career forums. Drawn to diverse opportunities, some international alumni are now pursuing careers in China and managed to come back with their families to

recall the good old days and share their aspirations for the future. To enhance its alumni network, PHBS holds its annual homecoming every fall semester. Since its establishment, the school has trained thousands of business leaders, entrepreneurs, and top managers.

## 6 Three PHBS Projects funded by the National Natural Science Foundation of China

After a rigorous merit-review, Professor Wang Pengfei has been awarded a National Natural Science Foundation of China (NSFC) grant from the National Science Fund for Distinguished Young Scholars for the proposal titled, “Macroeconomics Financial Frictions.” Professor Ma Linlin and postdoctoral fellow Zhang Shuai have been awarded an NSFC grant of the Youth Science Fund Project, for the proposals “Delegated Monitors of Fund Managers: An Empirical Analysis of the Economic Role of Mutual Fund Fami-

lies” and “Research on the Theoretical Model, Policy Effect and Optimization Path of the Two-Stage Self-Holding Land Auction System,” respectively. NSFC funded projects are national high-level academic projects representing the comprehensive research level and strength of universities and institutions.

## 7 PKU Ranked the 1st in China and 15th Worldwide in THE Employability Ranking



Ranked the 1st in China and 15th worldwide, Peking University is recognized for better preparing PKU students for their future jobs, according to the Global Employability University Ranking and Survey (GEURS). This ranking is designed by HR consultancy Emerging, published exclusively by Times Higher Education, and reveals which universities the recruiters at top companies think are the best at preparing students for the workplace. These 250 universities span 43 countries, and employers voted for institutions both in their own country and, if they recruit internationally, around the world.



## Peking University HSBC Business School and Cambridge Judge Business School Announce Cooperative Program

Peking University HSBC Business School (PHBS) and the University of Cambridge Judge Business School (CJBS) announced a cooperative program in Shenzhen, China, that extends previous business-education collaboration between the two institutions.

The two schools announced in March 2020 plans to advance long-term collaboration in business and management, beginning with the launch of two executive education programs focusing on innovation and international management.

The cooperative program consists of a new Global Executive MBA (GEMBA) program from Cambridge Judge Business School, and a Master's / Certificate program in China Studies for Economics and Management (MCS/CCS) from Peking University.

Cambridge Judge Business School will deliver its new Global Executive MBA (GEMBA) program through Cambridge Judge faculty and guest lecturers, with up to 50% taught in Shenzhen. The MBA degree and core curriculum of the GEMBA program will match that of the Executive MBA (EMBA) program that has operated in Cambridge since 2009 and which will continue in tandem with the new GEMBA program.

This will be the first time CJBS offers regular MBA teaching outside of Cambridge, marking a new chap-



The online signing ceremony at PHBS

ter in the business school's history when the GEMBA program starts in January 2023. Peking University's MCS/CCS program will be delivered concurrently in Shenzhen through its faculty and guest lecturers. The program is designed to focus on professional knowledge of China's economy, financial market and corporate management, delivering a profound and integrated vision of China with a global perspective.

“The Cooperative Program by Peking University HSBC Business School and Cambridge Judge Business School offers a rare opportunity to learn from two top business schools representing the East and the West. Students will acquire a deeper understanding of core knowledge and gain first-hand experience of contemporary business environments in China.”

— Professor Hai Wen



“Cambridge Judge Business School is proud of our Executive MBA (EMBA) program, which attracts students from around the world for a program based in Cambridge. The parallel Global EMBA program is a great opportunity for experienced professionals based in the Asia-Pacific region, and beyond, especially as they will also have the opportunity to participate in China studies with our partner Peking University HSBC Business School.”

— Professor Christoph Loch

While each party will confer its own degree or certificate on students, the Cooperative Program offers new opportunities for senior students to gain exposure to the business climate of both the Cambridge cluster and the Shenzhen Pearl River Bay Area, combining business studies with an exposure to Chinese business and management culture.

Says Professor Christoph Loch, whose 10-year tenure as Cambridge Judge Dean ends on 31 August: “Cambridge Judge Business School is proud of our Executive MBA (EMBA) program, which attracts students from around the world for a program based in Cambridge. The parallel Global EMBA program is a great opportunity for experienced professionals based in the Asia-Pacific region, and beyond, especially as they will also have the opportunity to participate in China studies with our partner Peking University HSBC Business School.”



Says Professor Hai Wen, PHBS founding dean, “The Cooperative Program by Peking University HSBC Business School and Cambridge Judge Business School offers a rare opportunity to learn from two top business schools representing the East and the West. Students will acquire a deeper understanding of core knowledge and gain first-hand experience of contemporary business environments in China.”



Up-to-date experience of Chinese business landscape in Shenzhen



In-depth study of economics and management insights through courses offered by world-class professors



Opportunities to have direct interactions with peers and to connect with business executives all over the world

ness School offers a rare opportunity to learn from two top business schools representing the East and the West. Students will acquire a deeper understanding of core knowledge and gain first-hand experience of contemporary business environments in China.”

The GEMBA program will commence teaching in January 2023 and the MCS/CCS program will start in September 2022. Information about admissions procedures has been announced this year.

# 2021 PHBS-CJBS Global Pitch Competition Final Held in Shenzhen

## Editor's note

The Grand Final of the 2021 PHBS-CJBS Global Pitch Competition was held on November 12 in Shenzhen, China. The event attracted more than 3,000 investors, startup entrepreneurs, and audience, both on-site and online.

Jointly initiated by the innovation and entrepreneurship centers of Peking University HSBC Business School (PHBS) and the Cambridge Judge Business School (CJBS), the competition involves nearly 150 high-quality startups from around the world in a variety of fields such as medical and health care technology, agricultural technology, advanced manufacturing, and new consumption technology. Participating entrepreneurs and investors come from regions in Europe, North America, as well as the greater China area. After a series of competitive pitching sessions over the last year, a total of ten startups made it to the final round.



Stelios Kavadias

Hai Wen

Wayne Chen



The Finalists

Wayne Chen, director of the Center for Innovation and Entrepreneurship (CIE) at PHBS, gave a welcome speech detailing the history of the competition and expressing his gratitude to the guests, supporters, and partners for their participation.

Hai Wen, vice chairman of Peking University Council and PHBS founding dean, delivered the keynote speech highlighting that, because of its location within the Guangdong-Hong Kong-Macao Greater Bay Area, PHBS has a special historic mission to help the construction of the area's innovation and entrepreneurship ecology. This would, he affirmed, be focused on cultivating innovative talents, introducing international innovation and entrepreneurship resources, and building a platform for university-enterprise cooperation.

Stelios Kavadias, associate dean of the Cambridge Judge Business School and director of the Innovation Center, sent his greetings via video, recalling the joint endeavors between CJBS and PHBS in organizing the competition. He also expressed his congratulations to the finalists and his sincere gratitude to PHBS colleagues for their efforts in hosting and preparing the finals. He emphasized that this collaborative effort highlighted the important and unique position of Shenzhen and Cambridge in the economic ecology, and that the startups in both places were creating new values and bringing new economic prosperity. He hoped that both sides would continue to host exciting competitions in 2022 and looked for-

ward to participating.

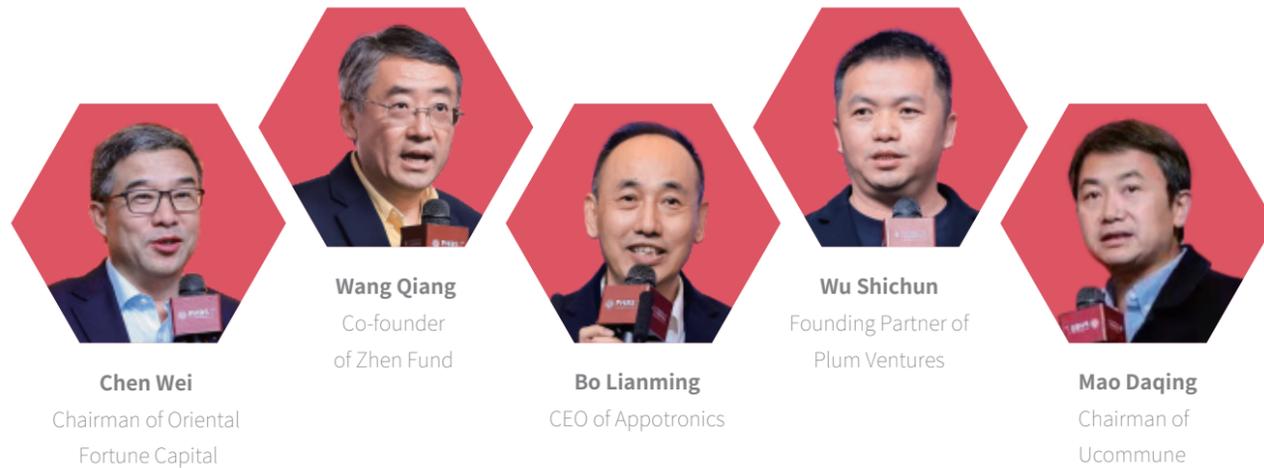
The Entrepreneurship and Venture Capital Advisory Board of Peking University HSBC Business School (PHBS), consisting of well-recognized scholars, venture capitalists, and entrepreneurs, was officially established and held its first meeting. According to Professor Hai, the advisory board will further strengthen the connection and cooperation with renowned innovative enterprises, venture capital institutions, and experts and scholars in innovation and entrepreneurship. It aims to promote the development of innovation and entrepreneurship in the Greater Bay Area by facilitating the growth of innovative and entrepreneurial enterprises, enhancing talent cultivation, and conducting related research.

After a fierce competition, the first prize went to MAGIC WEAVER "3D Digital Human Engine". Shenzhen-based startups BionicM and QYSEA won second prize with their "AIoT-based Intelligent Electric Prosthetic Robots" and "Underwater Robots". "R&D and Industrialization of Modular Intelligent Combined Mobile Cold Storage" from CIMC Cold Chain, "Power Exoskeleton to Consumer" from Enhanced Robotics, "Non-invasive Liver Fibrosis Precision Digital Diagnosis" from Precision MedCare, "Optical Active Alignment System" from AIT-PRIME, and "Self-healing Concrete" from MIMICRETE, won the third prize. "The Breast Pumping Massage Bra" from Lilu won the Outstanding Startup Award.



The Inauguration Ceremony

Following the competition, the Greater Bay Area Entrepreneurship and Venture Capital Forum featured keynote speeches given by renowned entrepreneurs and investors, and included such topics as technology and innovation.



**Chen Wei**  
Chairman of Oriental Fortune Capital

**Wang Qiang**  
Co-founder of Zhen Fund

**Bo Lianming**  
CEO of Apptronics

**Wu Shichun**  
Founding Partner of Plum Ventures

**Mao Daqing**  
Chairman of Ucommune

Chen Wei shared his insights on investment by giving examples from four aspects: investing in policies, trends, tracks, and people. He pointed out that China has entered the era of large-capitalization companies, and it is important to believe in the miracle of innovation.

Wang Qiang talked about how to select entrepreneurs and startups, saying that successful founders are those who think for the long-term and navigate through the challenges of the era. He also referred to the investing philosophy upheld by Zhen Fund.

Bo Lianming believed that technology and innovation enterprises in Shenzhen have their own unique features. Analyzing the growth logic of small and middle-sized enterprises (SME) in Shenzhen, he elaborated a unique model of enterprise growth. Bo said that enterprises should adhere to values, technology, and the long-term, insist on technological innovation and value creation, and build the growth of enterprises from small to large.

Wu Shichun pointed out that entrepreneurship is challenging and uncertain, but a glorious path. He proclaimed that China was experiencing a great leap forward in new technology, and exhorted listeners not to be bystanders of the times: The era of

new technology entrepreneurship has arrived, and entrepreneurs should seize the dividends of the times.

Mao Daqing focused on three aspects: "Opportunities and Challenges in China", "Technology Trends and Entrepreneurial Opportunities," and "Why do we want to start a business?" He asserted that entrepreneurship was the best form of investment and that entrepreneurs should understand that the power of the tide can determine the shape of the wave.

The success of the competition reflected PHBS and CJBS's endeavors in innovation and entrepreneurship. The two schools are committed to further strengthening their collaboration, integrating resources of first-tier investment institutions and industry leaders, as well as creating an ecosystem that engages in cooperation, empowerment, and cultivation.

# Demystify and Empower Professor Sargent's Quantitative Economics and Finance Program for PHBS Students

By Bai Qingwen, Cao Mingming



Professor Sargent and his students

learning and algorithms, dynamic models, as well as an online "training camp". The course was completed this July, so let's see what students gained from their class!

“Learning how to use tools could facilitate students in asking great questions, and basic training built on these tools will explicate the consistency behind diversity.”

Set by the PHBS Sargent Institute of Quantitative Economics and Finance (SIQEF) and designed and given by Thomas J. Sargent (winner of the 2011 Nobel Economics Prize and director of PHBS SIQEF), Chase Coleman (PhD, New York University), and Spencer Lyon (PhD, New York University), the one-year "Computational Economics and Finance" program covers basic knowledge of Python, including fundamental mathematics, data skills, machine

## Cutting-edge and practical

Students describe the course as cutting-edge and practical. Zhang Yue, a management major at PHBS, was impressed by the professor's patience and the abundance of topics in the class. "The class taught me how Python could be applied in our major," she reflected.

Professor Sargent hopes that this course could help students in tackling problems in the social sciences with classical and advanced machine learning technology. In the class, students tried to write abstract theories in the form of codes and embodied them into curves. “Such interactions enabled students to learn by doing,” says Dr. Lyon, one of the course professors. All codes involved in the course were recorded using Jupyter Notebook, and classes can be replayed at any time to ensure that students have mastered every point.



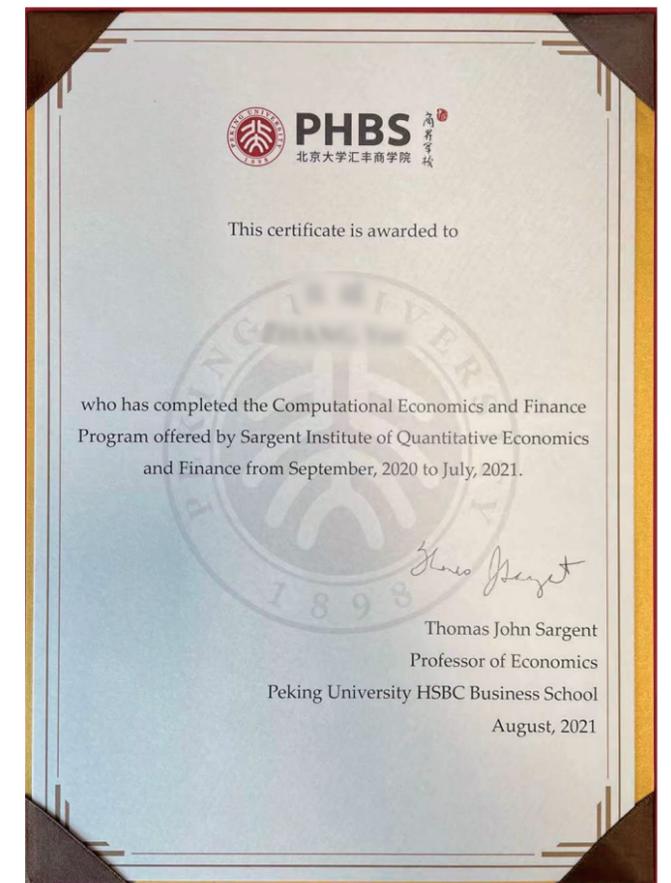
## Demystifying and empowering

Empowering students with a series of advanced tools is Professor Sargent’s education philosophy. “Learning how to use tools could facilitate students in asking great questions, and basic training built on these tools will explicate the consistency behind diversity.” The course taught students a series of core mathematical tools through continuous application of those tools. Course professors adopted the “incentive method” to eliminate students’ apprehension towards the advanced tools. Li Lei recalled an episode in Professor Sargent’s class: “Although he has made great achievements in this field, Professor Sargent often told us that doing research is not that easy, even for scientists like him. That

encouraged us a lot. From his words, I now know that progress is not only built on your talent, but more so on your hard work.”

For Professor Shi Jiao, vice director of PHBS SIQEF, the program helps to demystify concepts: “Professors tried to articulate complicated AI courses through simple ways. For example, to make economic forecast through using many methods of neural network and deep learning, or to abstract useful information from sentences, articles or figures.” The PHBS program was based on Professor Sargent’s decades of experience teaching economics. “Professor Sargent knows very well the difficulties of economics, the development trend of this subject in the future, and how computer science could help this process,” Professor Shi explained.

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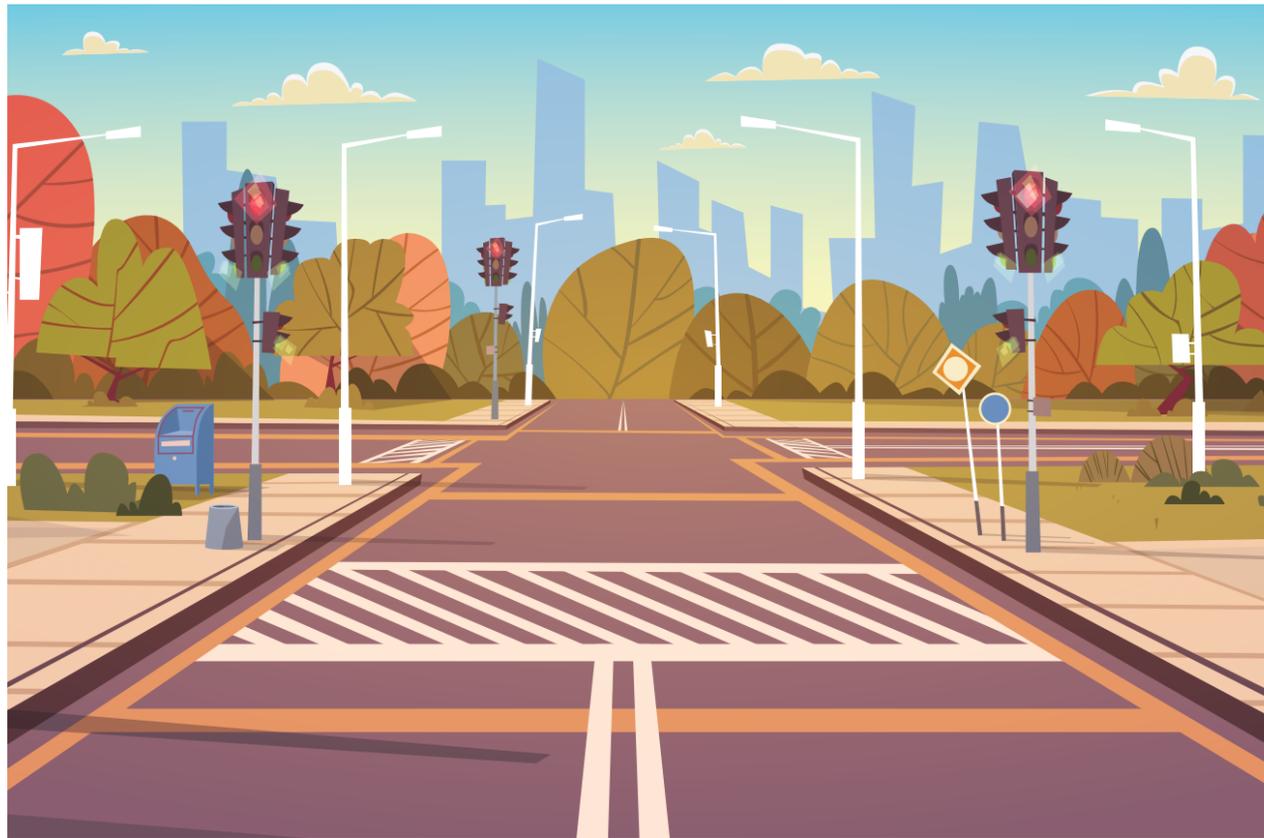
## Living up to great expectations

Dr. Lyon, who for years taught computational economics and finance in New York University’s Data Bootcamp, thinks highly of the PHBS program because it ensures enough time to “cover more themes, offer more details, and explore more cases”. Moreover, PHBS students live up to professors’ expectations. As Dr. Lyon said, they are willing to take these advanced courses and master the knowledge and skills needed in this field.

In fact, among over 40 students who took this class, some are preparing to continue their research, while others view this program as a way to increase their opportunities to get a better job.

Dr. Lyon also expressed his hope for the future: “We expect alumni to be prepared to make immediate contributions in either research or applied teams at the world’s top academic and private sector institutions.”

Estella Zhang Qiming also contributed to the editing



## Gianni De Bruyn: A Ph.D. Is a Long Way to Go, But I Enjoy the Journey

By Ding Ning

Six o'clock in the morning, Gianni De Bruyn opened his laptop and started our online interview in South Carolina, America. After the two-year study in Peking University HSBC Business School (PHBS), Gianni was successfully admitted to the University of South Carolina with a full scholarship, to conduct research on business strategy. "PHBS has had a huge positive impact on my life, as well as the friendships I made and the projects I've completed," he said.

“PHBS has had a huge positive impact on my life, as well as the friendships I made and the projects I've completed.”

After his bachelor's degree in physics at the University of Antwerp, Gianni moved to the United States to pursue a second bachelor's degree with a dual major in sports management and biomedicine at Grand Canyon University, where he also received his MBA. Upon completion of the MBA, Gianni decided to broaden his horizons and apply to a master's degree in finance at Peking University, for which he was accepted and received a full scholarship. It was at PHBS that he found his true passion for research and decided to pursue a Ph.D. after graduation.

PHBS offers masters of economics, management, and finance to international students, and was admitted to the finance program in 2018; although he was not limited to just taking finance major's courses. Students can take courses that cross their major, which enabled Gianni to choose a wide-range of courses based on his interests and to meet his two academic mentors, Professor David Lander, whose research interests are in macroeconomics and labor economics, and Professor Marshall Urias, whose research fields include monetary theory and international trade. "The conversation with both David and Marshall, was what got me interested in the deeper underlying mechanisms of phenomena," said Gianni. Study room, dining hall and gym; he spent most of his time in those three places and enjoyed his simple but pure academic life.

Gianni's enthusiasm was not only in class, but also in PHBS's diverse activities. Each year, PHBS holds a grand dinner party to celebrate the New Year, and in 2018, Gianni decided to join the host team. When asked why, Gianni said that "I want everybody to remember me." After the celebration, this was indeed the case.

Golden hair, deep voice, wearing a shiny flashy blue jacket, Gianni was standing in the center of the stage, speaking to his audience, "Hello everyone, I'm Gianni, 秦思齐." As the only international host in a team of four, Gianni not only showed his public speaking skills, but also his confidence, courage, and open mind. "Make sure people know who you are and never be afraid," he said.

Gianni visits local business street in Bayannur, Inner Mongolia.





Gianni and his girlfriend

“As the saying goes, ‘luck favors the brave,’ and Gianni was successfully admitted to the Business Strategy Ph.D. program at the University of South Carolina with a full scholarship in 2020.”

With his unique courage, Gianni made a brave decision for his first winter vacation in China. He decided to travel alone to Guangzhou and Wuhan’s rural areas to explore how local people lived. Although he had learned some basic Chinese, the language gap was still huge. However, as he recalled, “local people are very warm, kind-hearted, and hospitable. We lived and ate together just as I was one of them, a brother or a friend.” He loves Chinese culture and particularly the food. During the trip, he even tried to play Majiang with the villagers. “They didn’t ask me to pay for their food, so I played Majiang to lose money to them and pay for the food in that way”.

This trip strengthened Gianni’s interest to learn more about China. In 2019, inspired by the sustainable finance conference held at PHBS that January, Gianni and his classmates decided to submit a proposal focusing on tax equity and income bonds to support improved air quality through investments in biofuel plants in remote Bayannur, Inner Mongolia, China. They formed a diverse team from Belgium, South Korea, and America, and, with PHBS’s financial support, the team successfully conducted a field trip in April 2019 to improve their new innovative financial vehicle. “I don’t want to just look at the numbers, I need to visit the place by myself to see if our vehicle is applicable,” he said. Gianni thought the trip was very eye-opening in many ways, and much different from what he had read. As a result of this trip, the team’s design was chosen as one of the twelve finalists in the 2019 Kellogg-Morgan Stanley Sustainable Investing

“Getting a Ph.D. degree requires a lot of patience and dedication, but I enjoy the journey and wouldn’t want to trade it for anything in the world. Food, gym, and learning, that’s enough for me.”



Gianni and his team discuss their project for the 2019 Kellogg-Morgan Stanley Sustainable Investing Challenge

Challenge, where 109 teams from the world’s top universities, including Yale, Stanford, and Berkeley, joined in competition.

Gianni likes to plan ahead. For example, he finished his graduate thesis 8 months before the school’s required due date and then prepared for his Ph.D. applications. As the saying goes, “luck favors the brave,” and Gianni was successfully admitted to the Business Strategy Ph.D. program at the University of South Carolina with a full scholarship in 2020. Just as his student life in PHBS, Gianni still wakes up at 5am in the morning, does one hour of exercise and then reads papers, takes seminars, has a few meals, and writes his thoughts down, until 11pm. Learning, eating, and working out, those are still the three main things in his daily life. “Get-

ting a Ph.D. degree requires a lot of patience and dedication, but I enjoy the journey and wouldn’t want to trade it for anything in the world. Food, gym, and learning, that’s enough for me.”

When recalling his life in Shenzhen, Gianni said that it is the journey that had a huge positive impact on his life: “I met nice professors and kind friends there. Those precious memories will always stay with me, in my heart.”

# Nicholas Ruck: Living with Variety and Always Exploring

By Ding Ning

## Editor's note

Meeting in a café near the Chongwen Gate, Beijing, in late autumn, Nicholas Ruck had just finished his daily tasks as a foreign editor in a leading Chinese video news agency, CCTV+. Nicholas was admitted to Peking University HSBC Business School's UK campus in 2018. During the program, students study one year on the Boars Hill campus and another year on the PHBS Shenzhen campus. As one of the first batch of graduates in the program, Nicholas chose not only to study but also to work and live in China.

“China exceeded my expectations. It's growing and there is so much to do. I want to live here and experience what life is like in China.”

Nicholas presents his startup 'Mimic' at the 'Future of Blockchain Competition 2019' finale in London



## Choosing PHBS

Growing up in northeastern USA, Nicholas spent most of his life in America before going abroad for his master's study. After his first undergraduate degree, majoring in film writing at Ithaca College, he worked in this field for a couple of years, before deciding to jump out of the day-to-day routine and study something new. “I didn't enjoy the idea of doing another three-year program in the US. Studying abroad is much more adventurous for me,” said Nicholas. As his father originally came from the UK, Nicholas decided to study there to discover his roots.

Later on, the news that Peking University HSBC Business School had opened a campus in the UK drew his attention. PHBS offers a cross-border master's program in finance. Students admitted into the program will study one year on the PHBS UK Campus and another year on the PHBS Shenzhen campus. “I like variety,” said Nicholas, “it's really cool to study one year in the UK and another year in China.” Although some of his family and friends were against his choice, as he did not have a finance-related background, Nicholas insisted on choosing the cross-border finance program to study in two countries and explore a wider world.

In 2018, Nicholas was admitted by PHBS and started his study on the peaceful UK campus, a former manor, three miles south of the City of Oxford. “PHBS not only brought me a lot of opportunities but also changed the course of my life”, said Nicholas.

## “Finance enhanced my way of thinking”

Starting a finance master's program without any background was not easy. Nicholas began with basic mathematics, research methodology, learned how to do regressions, and how to use STATA software to analyze data. He was learning in a new field just like a child who is learning to walk. It was quite usual for Nicholas to take energy drinks or coffee to stay awake to keep up with tough courses. However, he gradually began to build up a basic understanding of statistics and financial research from his day-to-day hard work. “Nicholas always strives for the very best,” said his classmate Sydney Chu, a PHBS student of management.

Nicholas not only learned solid theoretical knowledge in class but also put it into action. Since graduation, he has been working for a cryptocurrency company called Euler which is heavily financially-focused, as it operates in the decentralized finance (DeFi) sector. While DeFi is far from the traditional financial models, the basic understanding of why financial events and incentives occur is rooted in fundamental financial education. “If I hadn't understood how to read a basic financial statement or hadn't learned basic accounting like I did at PHBS, I'm sure I wouldn't have been able to fully grasp much of what is going on in DeFi and Euler”, said Nicholas.



The education in finance has also provided Nicholas with an opportunity to build a startup. During his first year at the PHBS UK campus, by chance, he met Min Yao, a Chinese D.Phil student at Oxford University. Based on their common interests, they built a crypto-based live stream platform and entered the "Future of Blockchain" competition, finally coming fourth out of over 160 teams from elite UK universities, including Oxford and Cambridge. After the competition, Nicholas and his team decided to develop the program into a startup which they called the Thunder Core app. He believes his financial education provided a series of building blocks for the startup as he has had to think more deeply about incentive structures, profitable goals, and even game theory related to user rewards and transaction systems. "What I learnt in PHBS can navigate our startup in the most efficient direction", said Nicholas, "PHBS has certainly brought me a higher standard of life in addition to a master's degree."

“His financial education provided a series of building blocks for the startup as he has had to think more deeply about incentive structures, profitable goals, and even game theory related to user rewards and transaction systems. “What I learnt in PHBS can navigate our startup in the most efficient direction.”

Nicholas and other students of the first PHBS UK cross-border program cohort at the UK campus gathering



Nicholas and Professor John Hoffmire at the UK campus

“PKU has brought me an entrance into China that I wouldn’t have been able to receive elsewhere,” said Nicholas, “not only is the PKU master’s degree valuable for working in China, but it helps me to make connections and promote myself as someone who is capable of functioning at a higher level.”

“I want to stay in China as long as possible”

Living a student life is not enough for Nicholas, as he always wants to learn more about the people and the nature of life in China.

Nicholas recalled the first time he traveled to China, arriving in Changchun, a city in the northeast, in 2016. He described his culture shock at that time: “everything was better than I assumed it was supposed to be, the bustling commercial streets, triple-storied restaurants in the shopping mall, dazzling tech... The city is growing and there is so much to do.” Then the one-year study in Shenzhen drove him to explore more in China.

In September 2020, Nicholas found a job in CCTV+, a leading Chinese video news agency, to better understand the country. His team members come from various countries, so the working environment is very international. During leisure time, Nicholas continues to develop his startup. In his mind, the PKU experience is very helpful in the competitive workplace, whether it’s at a company or at a startup, as the fierce amount of work and effort that students put in during their studies prepares them for the workplace where they may have certain quotas or requirements to meet.

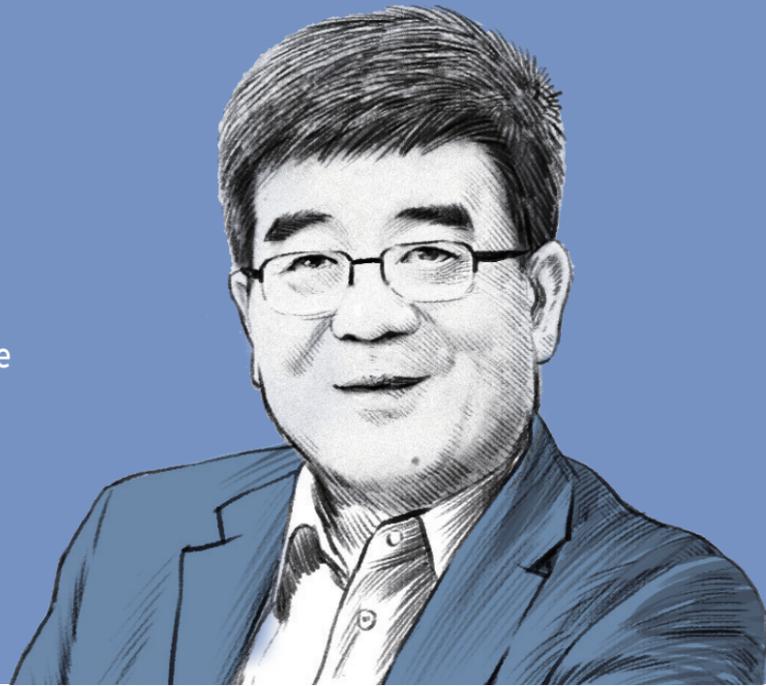
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When asked about his future, Nicholas answered, “I don't have any immediate plans to leave. Hopefully I can stay in China as long as possible.”

China  
SHEN ZHEN



“His outlook is to help educate the Chinese with an international vision and cutting-edge knowledge of economics. He hopes that every student and every teacher will become an important part of China's take off.”



Hai Wen:

## A Great Teacher Plans for the World and the Future

Speak slowly and act fast. Professor Hai Wen has the great wisdom of an economist.

After nine years in the Great Northern Wilderness, Hai Wen took the college entrance examination in 1977. Later, he became one of the first students studying abroad after China's Reform and Opening-up. As one of the generation of returned economists, Hai Wen has the quality of independence and tenacity shaped by his times.

Education renders him an international horizon and ignites his enthusiasm to open schools. He established the China Center for Economic Research in 1994 and the Peking University HSBC Business School (PHBS) in 2004. He worked with leading entrepreneurs

from all walks of life to set up the Rural Development Research Institute in 2019. It has been more than two decades since he embarked on the journey of entrepreneurship.

His outlook is to help educate the Chinese with an international vision and cutting-edge knowledge of economics. He hopes that every student and every teacher will become an important part of China's take off.

The sense of mission stems from his early years' experience.

### The way to economics

In 1969, Hai Wen left Hangzhou city for the countryside in Hulin County, Heilongjiang Province, and stayed in the Great Northern Wilderness for the next nine years.

What was our slogan back then? It was “going to the countryside, to the frontier, to where the motherland needs us most”. I took the lead to sign up to join the county production team in Heilongjiang Province to help build and defend the frontier, and cultivate and garrison the border. I was ambitious and very proud of myself at that time.

Reaping wheat is hard work, but cutting soybeans is worse. At the turn of autumn and winter, the soybean straw is dry and sharp and it hurts when you grasp it. Generally, reapers need gloves to protect their hands, but a pair of gloves costs one yuan. Those who can't afford it have natural gloves — their own skin. After a day's work, their hands will be blooded and scarred.

Tough work in the countryside has hardened Hai Wen. In 1977, he attended the college entrance examination with the other 5.7 million candidates and was admitted to Peking University, where his inextricable connection with economics started.

After graduating, he earned a master's degree and doctorate in economics from the University of California, Davis. His goal of studying overseas was very clear — go to the United States to learn economics and return to participate in the economic construction of the motherland. “On the one hand, I was attracted by western economics, with a strong desire to study the western academic system, hoping to have a deeper understanding of western society. On the other hand, it was my dream to support China's rejuvenation by exploring why the American economy was developed and by borrowing from its experience to build a better China.”

In 1994, Hai Wen joined a group of young

Hai Wen when he went to the countryside in Heilongjiang



returned economists including Lin Yifu, Yi Gang, and Zhang Weiying to found the China Center for Economic Research (CCER) at Peking University, now the National School of Development (NSD). It is regarded as an important national think tank and an academy for high-end talents in economics. In 1995, after studying and working overseas for 13 years, Hai Wen returned to Peking University and devoted himself to teaching, research, and management.

Since then, he has embarked on the road of economic research, renowned as one of the most important figures influencing China's economic development.

### A great teacher

When PHBS was established in 2004, there was only one building available. The resources of teachers, students, and funds, were almost non-existent.

“We can start building renovation with a start-up fund of one million yuan,” Hai Wen told the president of Peking University.

“A Department of Science and Technology laboratory will cost one million yuan, the president responded in surprise, “How can we run a college?” It turned out that Hai Wen had spent less than one million in purchasing some computers for the staff, and on renovation. From here, a

business school took shape."You have to learn how to raise funds yourself to run a business school. In 2008, I convinced HSBC to donate 150 million yuan, before convincing the government to match fund. After new buildings were constructed, our campus was expanded."

Since the erection of a brand new teaching building in 2013, the Peking University HSBC Business School has grown to be an international economic academy that, each year, has trained nearly 600 masters and doctoral students from around the world in economics, management, finance, and financial media.

In the teaching building, there is a brick donation wall, which denotes the contribution from all sides of the society. On the first brick is engraved the name "Hai Wen". Around his are more bricks, building a grander wall, and representing donations from alumni, entrepreneurs, and friends from all walks of life. Alumni's donations go directly to the Peking University Education Foundation, which is used to sponsor teachers, award scholarships to students, and support the launch of innovative teaching and research programs.

"The essence of education means that one tree shakes another tree, one cloud pushes another cloud, and one soul awakens another soul," as the German philosopher Karl Jaspers said.

“The essence of education means that one tree shakes another tree, one cloud pushes another cloud, and one soul awakens another soul.”

Hai Wen agrees with Jaspers. In his view, what matters most is not money, but the culture of donation. When students don't have the money, they are offered fellowships and scholarships. When they succeed upon leaving school, they can give back and help younger generations. It's the heritage of the donor spirit.

PHBS has adhered to the donor's spirit and is sowing the seeds of hope, by establishing high-end research institutions, namely, the Sargent Institute of Quantitative Economics and Finance, the China Center for Macroeconomic Research (CCMR), and the Research Institute of the Maritime Silk-Road (RIMS), launching PHBS' s UK Campus, and obtaining a series of international accreditations such as AACSB, EFMD and AMBA. In addition, the school has set up the Centre for Innovation and Entrepreneurship and launched the cooperative degree program with the University of Cambridge Judge Business School. Further achievements include building academic exchange platforms, fruitful partnerships with other schools and universities, and promoting the internationalization of higher education in Shenzhen.

During more than a decade since startup, Hai Wen has tutored hundreds of masters and doctoral students. Most are working in Shenzhen, and hundreds have settled in Beijing, Shanghai and other parts of China.

In Shenzhen, The essence of rural development is to study how farmers keep up with the pace of economic development during industrialization and urbanization, and how to ensure their income. Agricultural income alone is insufficient, so we need agricultural modernization to create more opportunities to generate non-agricultural income. In the past, there were a lot of labor-intensive industries in Shenzhen, which were undergoing progressive transformation. The school's MBA, EMBA, and EDP training courses have played an important part in this regard.

In September 2019, Hai Wen worked with

reputable entrepreneurs such as Wang Shi, the founder of the Vanke Group, and Feng Lun, the founder of the Wontop Group, to launch the Rural Development Research Institute at Yan'an University. Hai was appointed as the Founding Director.

During the next five years, Hai Wen undertook his new mission of rural development. One of the most important changes in the transformation from a developing to a developed country is that the proportion of farmers will drop greatly. In a developed country, farmers account for no more than 5% of the population. For example, the agriculture in America is well developed, but farmers make up only 1% of the population. China is now making that transition.

"The essence of rural development is to study how farmers keep up with the pace of economic development during industrialization and urbanization, and how to ensure their income. Agricultural

income alone is insufficient, so we need agricultural modernization to create more opportunities to generate non-agricultural income," Hai Wen explained.

"PHBS also nurtures tens of thousands of entrepreneurs and cultivates their investment awareness, management skills, and sense of social responsibility, making a tremendous contribution to the industrial transformation in Shenzhen."

Professor Hai presents graduates a copy of his original artworks, depicting a wide river with rolling mountains, which could stand for high ambition and great vision.





Hai Wen revealed that the Rural Development Research Institute will enroll full-time graduate students and set up rural development-related majors, focusing on training highly competent and well-rounded talents to serve the strategy of rural revitalization.

In conjunction with PHBS, the Institute will invite prominent experts, entrepreneurs, and policy makers from inside and outside of China, to give on-the-job training in innovation, entrepreneurship, and management within the Northwestern rural areas. The goal is to broaden the horizons and enhance the innovation and management capabilities of farmer entrepreneurs, and to coach and foster new rural enterprises.

Business schools focus on the promotion of economic development and a very important part of rural development is the reliance on its economy. PHBS and the Rural Development Research Institute share a common mission in terms of the study of economic development, policy, and talent training.

"People in my generation emphasize an enduring ideal, which is also the culture and mission of Peking Uni-

versity: One's work should benefit country and society," Hai Wen said, adding that both institutions are making great efforts to create a better society.

Hai Wen has been working on the front line, preoccupied with the business of recruitment, administration, and various innovative projects, but when doing what he loves, his mind is happy even if his body is weary.

"Except for primary education in the early years, degree education for adults and further education after work, education itself is a continuous process. The scope of teaching is not limited to students pursuing degrees in schools." Hai Wen explained the meaning of education, "Students learn what they think is useful from the teacher. Upon achieving great success after graduation, their teacher will be very pleased and proud."

## Rural Development

**Q: you said that your new mission for the next five years is rural development.**

**Hai Wen:** That's right. In the 1960s, the American economist Rostow wrote a book "The Stages of Economic Growth" It is easy to explain China's problems with his theory. His basic theory holds that there are two main forms of societies — traditional economy and modern economy. The traditional economy basically relies on natural resources. However, after the industrial revolution, the world has undergone qualitative changes, and has formed a society that is not entirely dependent on natural resources, but more on science and technology. So, when we look at the cross section, like Japan, Singapore and many Nordic countries, there are not sufficient natural resources. These societies rely on science and technology to become well-developed.

Traditional economies refer to the developing countries, and modern economies are what we call the developed countries. Transition from a developing to a developed country is not a progressive change, but rather caused by a rapidly accelerating process of industrialization and urbanization. Every country experiences such a transition from the traditional economy to the modern economy, and as such, it is not unique to China. It is Rostow's analogy of "take off".

**Hai Wen:** If we compare a country to a big airplane, China's real take off began in the 1990s. It has been nearly 30 years and its industrialization has completed two-thirds of the process. Yet we still have a gap to bridge before becoming a developed country, as our industrial structure needs to continue to transform in the future, and the proportion of the service industry will keep increasing.

China is halfway to urbanization. Agricultural output only accounts for about 7% of China's GDP, but nearly 40% of the population are farmers living in the countryside. The transition of farmers' dependency on agriculture and the countryside lifestyle

will continue. It will take about a decade or so for China to complete the take off.

Rural development points to two aspects. Firstly, it is about how to increase the farmers' income. For people in the city who are engaged in non-agricultural production, they have technologies, demands for products, high labor productivity, and fast income growth. However, the more developed a country, the lower the proportion of agriculture in GDP. If farmers only rely on the income from agricultural production, they will be unable to catch up with other classes. The question is how to solve this problem.

Secondly is how the countryside realizes modernization and how to rebuild the countryside when most farmers leave. In the initial stage of take off, the main concern is to develop the economy and make towns flourish, as the gap between the urban and rural areas widens. When the towns have developed, another problem is about how the countryside maintains the pace of modernization in infrastructure, culture and education, health care, social security, and environmental protection. It is an important issue for the future.

**Q: As the Founding Dean of Peking University HSBC Business School and the Rural Development Research Institute at Yan'an University, where do you expect the two schools to be in an ideal future and what is your plan for ten years' time?**

**Hai Wen:** In ten years, I believe that China will have become the largest economy in the world, and that its higher education would also go global. We can't make sure in all fields, but, at least in business education, I am convinced that PHBS will be China's best business school and world renowned. It is our vision.

The launch of the Institute of Rural development at Yan'an University will take some time, but I believe that within ten years, it will establish a unique status as an exceptional example and a vital force for China's countryside development.

From iAsk Public Welfare Leaders

## ▲ Jake Zhao

# What Is the Impact of Debt and Equity Misallocation on Companies in China and the United States?



### Jake Zhao

Assistant Professor  
Research Interests:  
Macro-Finance,  
Corporate Finance

The paper “The Misallocation of Finance” by Assistant Professor Jake Zhao, Peking University HSBC Business School, shifts the focus from distortions on the asset side of the balance sheet to the liability side, and uses firm-level data from China and the United States. The paper was published by *The Journal of Finance*, a top international finance journal, in the October 2021 volume. The collaborator for the paper is Professor Toni M. Whited from the University of Michigan and the National Bureau of Economic Research.

The key idea of Whited and Zhao (2021) is that firm capital structure may tell us something about how efficiently resources are allocated. Static or dynamic trade-off models, contingent claims models, dynamic contracting models, debt overhang models, agency conflict models, etc... can all generate real inefficiencies with large dispersions in leverage ratios.

Prior work by Hsieh and Klenow (2009) determined the amount of misallocation in a country by analyzing inefficiencies originating from capital and labor. However, empirically, capital and



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Their study shifts the focus from distortions on the asset side of the balance sheet to the liability side, and uses firm-level data from China and the United States.”

labor may be poorly measured and aggregated. Many firm observations simply do not have data on labor at all. An advantage of Whited and Zhao's methodology is that it can be applied to a wide range of samples and almost any firm-level data can be used.

In the Whited and Zhao framework, at an optimal social planner's allocation, the marginal contributions of debt and equity finance to nominal value-added are equal across firms in a sector. Empirically, distortions are inferred by observing deviations from this first-best allocation. These deviations manifest as differences (relative to the model) in debt-equity ratios across firms in a sector. Because distortions in these allocations lower productivity, large differences imply poorly developed financial markets and large potential gains from the reallocation of finance. The model also allows for a frictionless Modigliani-Miller

world with Modigliani-Miller prices as a baseline.

It should be emphasized that the primary aim of the study is measurement, but the authors also show that a class of dynamic capital structure models can produce similar results. This means that the methodology by Whited and Zhao can proxy for the debt and equity reallocation gains generated from much more complex and difficult to estimate dynamic models of capital structure.

Ultimately, Whited and Zhao find that reallocating liabilities of firms in China to mimic U.S. efficiency would produce gains of 51% to 69% in real value-added, with only 17% to 21% stemming from inefficient debt-equity combinations. They are also able to back out the shadow costs of debt and equity, and report that large Chinese firms and those located in developed cities have significantly lower financing costs.

## Jia Dun

# Dynamic Price Competition, Learning-By-Doing and Strategic Buyers



### Jia Dun

Assistant Professor

Research Interests:

Macroeconomics,

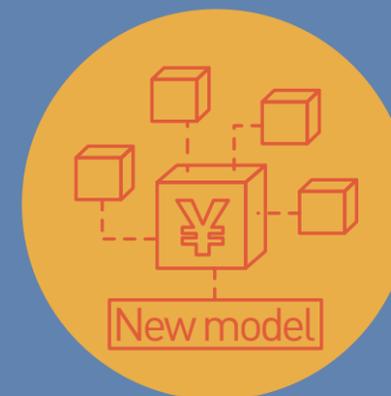
Monetary Economics,

Macro-Finance,

Computational Economics,

Chinese Economy

Maintaining market efficiency often times involves balancing the trade-off between allowing for increasing production concentration among a small number of highly productive firms and decentralizing operations across many manufacturers simply for sustaining market competition. Classic theories on price competition find that a more productive firm may optimally adopt a very aggressive pricing strategy, by which competing firms with low productivity would be pushed to exit the market when they are consistently facing an extremely low price set by the highly productive firm. Aggressive pricing strategies therefore leverage up a more productive firm by killing market competition prematurely and helping establish its long-run market status as a monopolist. In particular, when a firm is achieving productivity advancement by undergoing greater reduction in the marginal cost of production by making more sales, i.e. the effect of learning-by-doing, aggressive pricing of the firm can speed up the monopoly-gaining process for a firm while decreasing the social welfare. Based on these findings, existing antitrust policies routinely regulate and penalize aggressive pricing actions in order to restore market competition.



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In the new model, sellers benefit from learning-by-doing but buyers are critically-important in the way that they are able to partly internalize the impacts of their purchase decisions on the dynamics of market structure evolution and thus on their future buyer surplus.”

In “Dynamic Price Competition, Learning-By-Doing and Strategic Buyers,” a paper recently accepted by the *American Economic Review*, Assistant Professor Jia Dun and his coauthors, Andrew Sweeting at the University of Maryland, Hui Shen at the Chinese University of Hong Kong (Shenzhen), and Yao Xinlu at Amazon introduce the long-lived strategic buyers into classic models of dynamic price competition. In the new model, sellers benefit from learning-by-doing but buyers are critically important in the way that they are able to partly internalize the impacts of their purchase decisions on the dynamics of market structure evolution and, thus, on their future buyer surplus.

This paper, in particular, features the demand side that has been long neglected in the classic framework that has lasted for centuries. Specifically, buying consumers are strategic and forward looking, by which they can choose from which firm to buy products for consumption. Buyers know that buying goods from one firm only helps this firm reduce its marginal

cost of production and gain technological know-how through learning-by-doing, and reinforce its market share to move closer to a monopoly status. Therefore, strategic buyers may optimally switch purchases across firms in a dynamic and optimal way and balance the operating efficiency of firms’ production over time. A larger degree of being strategic among buyers helps mitigate the likelihood of pushing a firm to become a monopolist in the long run while, at the same time, it benefits all buyers by enjoying the surplus from sustaining sufficient firm competition. Ultimately, being strategic maximizes buyers’ long-term utility. This paper finds that having strategic behaviors on the demand side can nullify, at least partially, the impacts of aggressive pricing of more productive firms and can completely kill the possibility of aggressive pricing when the motive of being strategic is strong enough. Therefore, longer-term market competition can be sustained among multiple manufacturers as a result of buyers’ efforts, and at the same time consumer’s

# Insight

welfare and social welfare can be improved.

This research has triggered interest across branches of economics and is rich for having theoretical contributions and broader policy implications. Firstly, the paper finds that even if there is a small fraction of strategic buyers with a low degree of strategicness, the multiple equilibria issue in the classic dynamic pricing framework is largely alleviated. Most importantly, the monopoly equilibria with low long-term social welfare and firms' aggressive pricing can be eliminated. Consequently, the accommodative and competitive equilibria across comparably productive firms are being maintained in the short and in the long run.

Secondly, this paper has made ground-breaking methodological contributions to existing solutions of the dynamic pricing model. Given that the routinely used Homotopy algorithm helps determine only a partial set of equilibria, this new research introduces a novel recursive and back-tracking induction algorithm to verify whether a specific type of equilibrium with certain characteristics exists. For example, as for the aggressive-pricing equilibrium, it should be the case that once the leading firm takes the lead in making sales beyond some tipping point, its competing firm would always exit the market and make the leader a permanent monopolist firm. The recursive algorithm exactly provides the criterion to check the uniqueness of the pro-competitive market

equilibrium by ruling out the equilibrium driven by aggressive pricing.

Thirdly, at the industry level, this paper suggests that considering the supply-side pricing behavior is insufficient to warrant antitrust review on big firms. Given that there are single and multiple important strategic and forward-looking buyers in many industries, for example, central and local governments along with state-owned companies in emerging market countries, buyers' purchase decisions and their impacts on shaping the market structure should also be assessed to fully determine if a market is subject to an antitrust probe. Therefore, the pro-competitive regulation framework should be updated to consider the dynamic interactions between the supplies and the demands at the same time in certain markets. From the macroeconomic perspective, there are significant heterogeneities in market concentration of firms and pricing equilibria across industries. The effectiveness of monetary policy transmission into different industries and to firms therefore also depends on industry heterogeneities in terms of price flexibility and price competition across firms that are jointly affected by the buyer sides. Therefore, macroeconomic models featuring nominal price rigidity may be further developed to incorporate heterogeneities and competition at the industry level.

- More Favorable Policies Offered to Energize Markets
- Make New Technologies Cheaper to Allow for Carbon to be Priced
- China Needs to Develop Strong Comprehensive Policies, and Work with the US and Other Countries to Develop the "Climate Club"



# More Favorable Policies Offered to Energize Markets

By Zhang Yue, China Daily



In a recent interview with China Daily, PHBS Professor Ren Ting shared his insights regarding the regulation. Ren identified that the most prominent feature of the new guideline is that it formulates a general and unified practice for all types of business, covering the entire process of registration, information update, and business cancellation.

China's efforts in energizing market players, particularly their response towards the COVID-19 pandemic, is well-targeted and diversified, analysts have said.

Incentives like financing tools and tax exemptions were put in place to cope with liquidity pressure. One could also see the country's stronger efforts in deepening reform of government operations to boost the business environment, lower institutional transaction costs and energize the market.

As the Chinese economy rebounded strongly from the blow of the pandemic, its endeavors in nurturing a fairer market environment with a more pro-business regulatory framework are moving faster.

The State Council issued a regulation on August 24 outlin-



## Ren Ting

PHBS Associate Professor  
Research fields include organizational design, ownership and corporate governance, human resources and labor studies, and behavioral economics

ing the requirements, process and procedures for the registration of all market entities in China.

China has relentlessly sought to make the country's business environment more favorable for all entities and facilitate their operations. Since 2015, a number of national-level regulations have been issued to streamline business administration, decouple business licenses and operation permits, and shift the registration process for some into record filing.

All the efforts are delivering notable results.

Last year, despite the extremely challenging situation, the total number of newly registered market entities in China increased by 21.95 percent year-on-year. In the latest executive meeting of the State Council, China's cabinet, data showed that in the first half, some 77,000 market entities were added per day on average.

The new regulation in August is now seen as a fruitful outcome for previous registration reforms, as it gives out unified, general requirements for all types of market entities, including an individually owned business, joint venture and its branches and

self-employed individuals. It also streamlined the registration cancellation process for exiting the market.

Known as the first of its kind in giving unified requirements on registration of market entities, industry experts see it as a critically important step that will work effectively in energizing China's tens of millions of market players in the long run.

Ren Ting, associate dean and professor at Peking University HSBC Business School, said the most prominent feature of the new guideline is it gives out unified standards on relative regulatory approaches, covering the entire process of registration, information change and business cancellation.

"China's efforts in facilitating business operation by eliminating institutional hurdles have been continued in recent years. Yet previously, registration requirements were still different considering the specific condition of business," Ren said. "Now, the new regulation means a general practice for registration will be applied to all types of businesses".





"This will notably stabilize market anticipation for government's regulatory approaches and foster a stable, fair, transparent and predictable business environment," he said.

"Registration is the start of a business's life cycle. If there is no strong willingness in starting businesses in the first place, there won't be anything of a market economy. This is why a standardized, facilitated market registration is so important in accessing market oversight and government services," he said, adding this is also the reason that in the World Bank's annual ranking on Ease of Doing Business, "starting a business" was listed as first among the 10 criteria.

China's ranking in the World Bank's ranking on the Ease of Doing Business has been on the rise in the past five years, ranking at 31 in 2019.

**"This will notably stabilize market anticipation for government's regulatory approaches and foster a stable, fair, transparent and predictable business environment."**

Figures presented in the Doing Business 2020 report, the latest in a series of annual reports by the World Bank, show that China has made greater progress in the 2005-2020 period than any other

large economy in terms of facilitating the ease of doing business.

"China has improved across almost all Doing Business indicators over the last decade, but the progress has been particularly impressive during Doing Business 2018-2020, when most Doing Business indicators improved," the World Bank said.

Ren believes a facilitated registration system will lift concerns for those starting a business and eliminate unwarranted institutional costs, allowing businessmen to put their major focus on good operations. It will also boost entrepreneurship and energize market players.

"Facilitating the registration process does not mean an absence of oversight, but means to change regulations and approval into compliance oversight, so that business operations will not be easily interrupted," he added.

The State Council said in its latest executive meeting on Wednesday that the country will roll out pilot programs on the business environment in several select cities, which is in support of local reform efforts to better benefit firms and individuals.

**"Registration is the start of a business's life cycle. If there is no strong willingness in starting businesses in the first place, there won't be anything of a market economy. This is why a standardized, facilitated market registration is so important in accessing market oversight and government services."**

The new national regulation will be particularly helpful for small, micro businesses and individually owned businesses, who used to face the most challenges in business registration. Meanwhile, most industrial insiders believe that since last year, China's economic recovery was partly supported by these smaller businesses because they are numerous and cover several sectors.

Ma Xiaobai, an associate researcher at the Development and Research Center of the State Council, said energizing market players is key to keeping employment stable, generating incomes and coping with external shocks.

"With energetic market players, there will be job creation. And with job creation, household income will be on the rise. Last year, China's per capita disposable income grew by 2.1 percent year-on-year. Also, tax revenue generated by the country's newly added market entities reached 3.82 trillion yuan (\$592 billion), surpassing the amount of tax and fee cuts last year," Ma said.

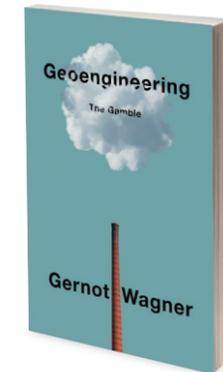
"All these have proven that market entities are an important driving force for socioeconomic development, and we should not let up work on this front."



Gernot Wagner:

# Make New Technologies Cheaper to Allow for Carbon to be Priced

CO<sub>2</sub>



**Gernot Wagner**

Climate Economist at New York University

Gernot Wagner teaches climate economics at NYU, and writes Bloomberg's Risky Climate column. His research, writing, and teaching focus on climate risks and climate policy. In his new book *Geoengineering: the Gamble*, Wagner provides a balanced take on the possible benefits and all-too-real risks. In spite of those risks, he argues, geoengineering may only be a matter of time. Not if, but when. He believes that modern-day policies, like clean electricity standards, cap-and-trade systems, and lots of other rules and regulations follow the same principle: increase the price of carbon and other greenhouse gases.

**Q:** China has committed to peaking carbon dioxide emissions before 2030 and to achieving carbon neutrality before 2060. Is the target achievable or too aggressive? What is the biggest impact it will have on China's future energy development?

**Wagner:** Last fall's announcement of a net carbon neutrality target date of 2060 was a surprise to many, and a very positive one at that. China joins a long list of countries with such goals, including the EU, Japan, and US President Biden's declared goal of a net-carbon neutral electricity sector by 2035. The most important part, of course, is the near-term implementation. There, the 14th Five Year Plan took some further steps, but much more, of course, needs to be done to achieve net carbon neutrality. Given how many infrastructure investments are in place for decades, the time to set China on a low-carbon, high-efficiency path is now.

**Q:** Lots of economists believe in the role of carbon taxes, which controls carbon emissions by carbon price adjustment. Nordhaus even calculated the appropriate tax for each ton of carbon dioxide: 50 US dollars. However, for some countries that do not have the ability to upgrade energy technology, price adjustment alone is not enough. Feasible clean energy alternatives are also extremely crucial. Therefore, carbon taxation has not become a worldwide consensus. Now the Biden government has begun to promote carbon taxes again. How will such a policy develop in the near future?



**Wagner:** Carbon taxes are no panacea, but the principle -- that higher carbon prices mean lower carbon emissions -- is, of course, crucial to any climate policy. The very first time someone tried to regulate fossil fuel consumption was King Edward I, in early fourteenth century England, when he banned the burning of sea-coal in his kingdom. The penalty for repeat offenders: death. Nobody would mistake that for a carbon price, not least because the ban was not instituted for climate reasons. The principal concern at the time was local air pollution. But the principle, of course, is very much the same: a high price -- infinity in this case -- for something implies less of it.

Modern-day policies, like clean electricity standards, cap-and-trade systems, and lots of other rules and regulations follow the same principle: increase the price of carbon and other greenhouse gases. That principle should very much be at the core of any climate law or regulation.

**Q:** What do you think of the carbon trading mechanism in the Global Climate Club? For example, a steel company based in Europe must purchase carbon emission allowances. To avoid such cost, it needs to upgrade production technologies, which is expensive and difficult to achieve in the short term. Thus for this company,

shrinking production capacity and buying cheaper steel from India is a more rational choice. In this way, European steel production will decrease and workers become unemployed, but global carbon emissions will not be reduced.

**Wagner:** Carbon trading, in many ways, is just such an application of carbon pricing, albeit an indirect one: set a cap on emissions and, thus, create a price. The EU was the first major jurisdiction to institute a carbon market, and it has strengthened its system over time. The idea of "climate clubs" or "carbon clubs": a set of countries, the "club," goes it alone on more ambitious climate policy in an effort to overcome the impasse of global climate negotiations. That idea often goes hand-in-hand with tariffs. Assessing tariffs based on the carbon content of goods is complicated, but will lead to stronger climate policy and better economic outcomes.

**Q:** Apart from carbon taxes, many countries are also prepared to encourage and subsidize new energy sources. However, there are two different options. For example, the major difference between the Biden plan and the Wyden plan in the United States is whether tax credits are granted to only new energy sources such as wind and solar power, or granted to all energy

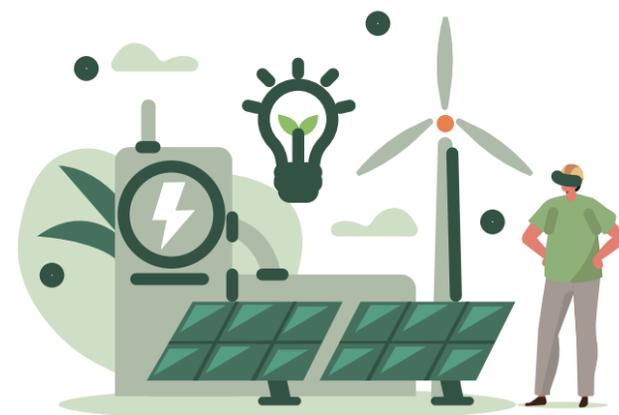


sources as long as they are originally intended to reduce carbon emissions? How do you think the energy structure will change in the future? Will solar energy become the most important energy type?

**Wagner:** Subsidies are indeed an important part of sensible climate policy. Economics 101 tells us to price carbon, Economics 102 tells us that taxes alone aren't enough. In much the same way that there are negative spillovers from too much carbon pollution that need to be taxed, there are also positive spillovers from technological change. This goes for basic research and development—think scientists doing foundational work in a lab. It also goes for RD&D, with an extra "D" for deploying existing technologies. Add a third "D" for demonstration, if you want to demonstrate your insider knowledge: RDD&D. The fourth, RDDD&D for diffusion, appears to not have caught on. Every one of these letters deserves to be subsidized.

The reasoning is simple. Inventors tinkering in their garage might stand on the shoulders of giants, but by and large they consider the benefit to themselves only when deciding how much to invest. They don't consider that they are creating shoulders for others to stand on. That logic goes for the R, and it extends through every one of the Ds. Diffusion often comes in the form of network effects. When someone puts a solar panel on the roof, his neighbors are more likely to do so, too. The right answer: Subsidize.

Perhaps the most famous climate-related case is solar photovoltaic (PV), with prices declining by



around 90% in a decade and about 99% since the 1970s. The reason? Subsidies every step along the way.

In many ways, it is subsidies that ought to come first, before pricing carbon. First make new technologies cheaper to allow for carbon to be priced.

**Q:** There is a saying that if you want to invest in ESG, it's better to buy stocks of large technology companies. Technology giants are said to be closer to the concept of GREEN. For example, the Carbon Transition Fund issued by BlackRock is more like an ETF that holds shares of Apple, Microsoft, Amazon, Alphabet and Facebook, etc. What do you think of such a mindset? Do we actually have a solid ESG investment guideline in the market? If not, how should we develop one?

**Wagner:** Equating "ESG" with investing in large technology companies is, I believe, the result of us not quite knowing what to make of "ESG" in the first place. In many ways, ESG selection criteria are replete with negative screens: no oil, no coal, no gas, no tobacco, no poor labor practices, no gambling or other vices. What's then often left in the end are high tech companies.

I might suggest to go one better than this: don't just divest from fossil fuels. Actively bet against them! The clean energy transition is clearly only a matter of time. It's when, not if. Timing, of course, is important, but the trend is clear.

\* This article has also been translated and published in PKU Financial Review.

William D. Nordhaus:  
**China Needs to Develop Strong Comprehensive Policies, and Work with the US and Other Countries to Develop the "Climate Club"**



**William Nordhaus**

Sterling Professor of Economics at Yale University, Winner of the Nobel Prize in Economics

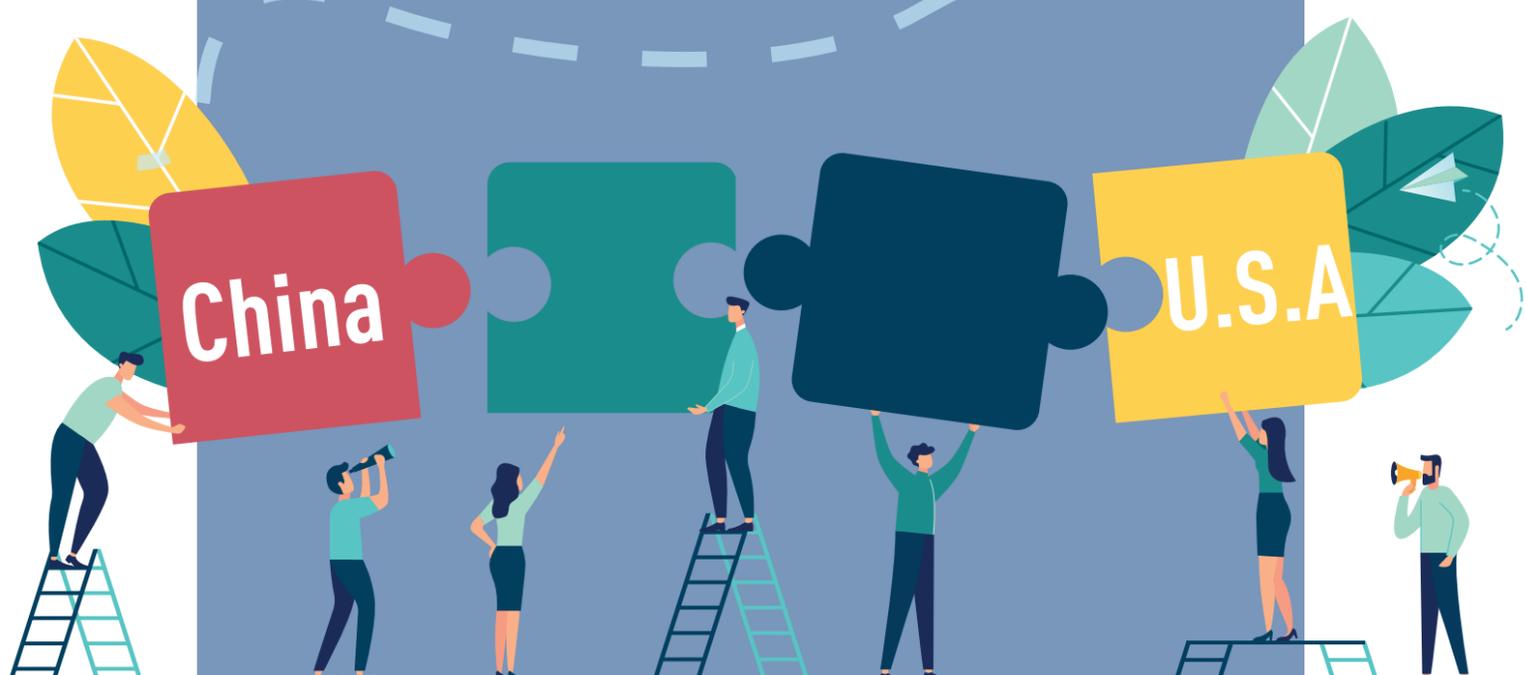


**Q:** Our understanding of the "the Spirit of Green" is using the incentive and restraint means of the market to combine private power with public interests, and then to solve social problems. This is the case for vaccine research and development under the COVID-19 pandemic. Vaccines are mostly developed by private companies, but they serve the interests of the public very well. Do you think "the Spirit of Green" has replaced the "invisible hand" or "animal spirit" and can overcome the so-called "market failure" or "government failure"?

**Nordhaus:** The spirit of green is the observation that a modern society must rely on both market and collective actions. We have neglected the analysis of the proper role of collective action in the past, and the book hopes to fill that need.

**Q:** You have always firmly supported setting a price on carbon emissions and imposing a carbon tax on this basis. However, you do not agree to adopt a "carbon production caps" or "commitment to zero emissions," because you think this will greatly destroy the economy. On the contrary, the carbon tax method can not only provide tax rebates and subsidies to poor people with relatively low carbon emissions, but also encourage private enterprises to carry out more innovations in decarbonization and carbon capture technologies. How do you evaluate China's "carbon peak" in 2030 and "carbon neutral" in 2060, since China is following the mainstream "zero emissions" commitment table?

William Nordhaus is Sterling Professor of Economics at Yale University, New Haven, Connecticut, USA. He was awarded the Nobel Prize in Economics in 2018. In his new book *The Spirit of Green: The Economics of Collisions and Contagions in a Crowded World*, Nordhaus describes a new way of green thinking that could help us overcome our biggest challenges without sacrificing economic prosperity, in large part by accounting for the spillover costs of economic collisions. He believes that the globalized world is shaped not by isolated individuals but rather by innumerable interactions inside and outside the economy. Since China and the US are the largest carbon emitters in the camp of developing and developed countries respectively, both countries need to recognize that when confronting global issues (like climate, pandemics, and nuclear weapons), there is no substitute for global governance, which means that China and the US must work together as brothers and sisters.





**Nordhaus:** I do not have a deep understanding of the complexity of Chinese policies. China is the most important country in leading the world on climate policy, along with the US. China needs to develop strong comprehensive policies, and work with the US and other countries to develop the "climate club."

**Q:** There is a view that it is impossible to adopt a market approach to solve major problems such as carbon emissions that endanger the global environment. Because the market approach is too slow and gradual, it sometimes produces a kind of "arrogant and rational neglect", and the COVID-19 pandemic has especially increased the evidence. In China, many people think

that this is actually related to the deterioration of the earth's environment, which is called "ecological civilization risk." In particular, the excessive pursuit of economic growth has produced a lot of carbon emissions, reduced a lot of forest area, and caused more uncommon animals to come into contact with humans. Then the virus has been transmitted to humans through this "human and animal coexistence" model. Do you think the statement is reasonable?

**Nordhaus:** Markets can move with lightning speed. But they only move in the direction propelled by profits. By using appropriate fiscal signals, we can correct the incorrect market signals on green innovation and technologies. Then, as with COVID vaccines, markets can move quickly in the right direction.

**Q:** You calculated that the price per ton of carbon emissions is US\$40 (carbon tax is levied on a 2-4% basis). We wonder if this price is universal? Is this \$40 in line with China's current situation? Should the price of carbon emissions in developed countries be higher and lower in developing countries?

**Nordhaus:** This was calculated on the basis of identified damages. If instead countries decided to aim for a 2 deg C target, the price would be much higher, more than \$100/tCO<sub>2</sub>.

**Q:** China and the United States are the largest carbon emitters in the camp of developing and developed countries respec-

tively. The cooperation between China and the United States, especially on climate change and carbon emissions, is very important. Of course, this cooperation includes technology exchange and technology diffusion. Regrettably, China and the United States are undergoing a very cruel technological blockade and trade war, which has greatly slowed down mutual learning and proliferation in environmental protection. What do think the future holds?

**Nordhaus:** Both countries need to recognize that on global issues (like climate, pandemics, and nuclear weapons), there is no substitute for global governance, and that means that China and the US much work together as brothers and sisters.

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