Future of Central Banking under Globalization:
Summary of the 2010 International Conference
Organized by the Institute for Monetary and Economic Studies of the Bank of Japan
by Shigenori Shiratsuka, Wataru Takahashi, Yuki Teranishi, and Kozo Ueda

I. Introduction

The Institute for Monetary and Economic Studies (IMES) of the Bank of Japan (BOJ) held its 2010 International Conference, entitled “Future of Central Banking under Globalization,” on May 26 and 27, 2010, at the Bank of Japan Head Office in Tokyo.¹ The conference sought to shed light on the global linkage between the financial markets, the financial system, and the real economy to explore implications for the future of central banking. The conference involved some 100 distinguished participants from academia, international organizations, and central banks.²

The conference began with two opening remarks, delivered by the Governor of the BOJ, Masaaki Shirakawa, and by the Chairman of the Board of Governors of the Federal Reserve System (Fed), Ben S. Bernanke. The honorary adviser of IMES, Bennett T. McCallum (Carnegie Mellon University) delivered the keynote speech. William R. White (Organisation for Economic Co-operation and Development) presented the Mayekawa Lecture. Each of the five sessions consisted of a paper presentation and two formal discussions, followed by floor discussions. The conference concluded with a policy panel discussion.

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1. As conference organizers, we express our sincere gratitude to Bennett T. McCallum and Maurice Obstfeld, our honorary advisers; to Kazuo Ueda, our chief councillor; and to all other conference participants for thought-provoking presentations and discussions. Special thanks go to Junko Miyoshi and other staff members of the Institute for Monetary and Economic Studies, who devoted much energy to organizing this conference. The views expressed in this paper do not necessarily reflect the views of the Bank of Japan.
2. See Appendix 1 for the program. See Appendix 2 for a list of participants; their affiliation is as of the time the conference was held.
II. Opening Session

In his opening remarks, Shirakawa discussed the future of central banks and central banking. He pointed out that central banks had succeeded in stabilizing inflation and economic activity and now faced new and difficult challenges, such as changes in the manifestation of economic imbalances, the risk of creating new bubbles through policy response after the bursting of a bubble, and the risk of involvement in quasi-fiscal policy through unconventional policy measures. In addressing these challenges, he emphasized the importance of understanding the primary mandate for a central bank, improving financial structures, and adequately considering the international monetary system. Finally, he touched on the importance of institutional culture for central banks, encompassing banking operations, constant learning, integration of wide-ranging knowledge, and cooperation among central banks.

Bernanke discussed central bank independence, transparency, and accountability. Referring to theory and experience, he argued that greater central bank independence contributed to desirable macroeconomic outcomes and financial stability. However, he spoke against unconditional independence, suggesting that the central bank’s actions must be accountable to the public, its goals set by the government, and its independence not extended to non-monetary functions without qualification. Finally, he called for clarity regarding the range of central bank activities, addressing the issue of the fiscal/monetary distinction arising from unconventional policy.

From the floor, Kazuo Ueda (University of Tokyo) asked about the importance of setting a higher inflation target to produce a wider safety margin against the zero lower bound of nominal interest rates. While Shirakawa in his speech had stated that a higher inflation target did not seem to have materially changed the recovery path of the economy, Bernanke answered that central banks had established credibility for inflation rates close to 2 percent, and that it would be risky to reset the inflation target. Regarding the inflation target, Pierpaolo Benigno (LUISS Guido Carli) inquired about the need for numerical clarification of price stability. Bernanke responded that there were different ways to communicate what price stability meant, pointing out that the Fed had no official target, but provided information about inflation projections in a long time horizon.

Benigno asked whether central banks’ unconventional policy should be conducted in normal times. Pierre-Olivier Gourinchas (University of California at Berkeley) added a question inquiring whether foreign currency swap programs should be made permanent. In his reply, Bernanke noted that he valued their backstop role in stabilizing the financial markets under severely stressed circumstances, but believed that such measures should be temporary, serving as incentives for financial institutions to manage currency mismatches. Shirakawa added that in the face of systemic crisis, the most important role for central banks became the role of the lender of last resort. Regarding the foreign currency swap program, both Bernanke and Shirakawa pointed out the importance of infrastructure elements, including cross-border collateral arrangements.

3. For details, see Shirakawa (2010).
4. For details, see Bernanke (2010).
III. Keynote Speech: The Future of Central Banking: A Lesson from United States History

McCallum reviewed an aspect of U.S. monetary history by discussing how the metallic standard had been overturned by the fiat money system, relating the process to the issue of greenbacks during the Civil War and subsequent Supreme Court decisions. He argued that the failure of the Supreme Court to distinguish between monetary and fiscal policy had contributed to decisions that made possible the shift from the metallic standard to a fiat money system. He noted that although the U.S. Constitution was designed to prevent major changes in the purchasing power of the medium of exchange, due to the absence of readily available data on comprehensive price indices, the metallic standard had been the only means of achieving price stability. As for the implications for current monetary policy, he concluded that the availability of comprehensive price indices made possible a clear monetary standard that would be in accordance with the Constitution and emphasized the importance of a clear distinction between monetary and fiscal policy aspects of central bank actions.

IV. Mayekawa Lecture: Some Alternative Perspectives on Macroeconomic Theory and Some Policy Implications

White stressed the need to review workhorse models for monetary policy analysis, such as new classical and New Keynesian models and applied Keynesian models, in addition to a consideration of insights from the Austrian school. He pointed out three shortcomings in the workhorse models: new classical and New Keynesian models assumed a self-stabilizing economy; applied Keynesian models performed poorly in forecasting turning points and tended to ignore expectations; and all of the models paid inadequate attention to credit, balance sheets of financial institutions, and financial imbalances that led to crises and subsequent stagnant economic conditions. In contrast, he stressed, the Austrian theory considered the creation of money and credit in the financial system. Finally, he suggested that monetary policy needed to have a long-term horizon, focusing on avoiding future crises arising from the accumulation of imbalances. He noted that policies directed to lowering the probability and costs of major crises would be more tolerant of minor downturns than previously.

In the general discussion, Pierre Siklos (Wilfrid Laurier University) pointed to the difficulty of assessing the magnitude and duration of downturns. White replied that downturns over the preceding 20 years had been relatively limited. Thomas J. Jordan (Swiss National Bank) asked about policy recommendations during the recent crisis. White, pointing out the importance of medium-term policy implications, replied that policy actions taken during the crisis had been appropriate, from the perspectives of both Hayek and Keynes. Takatoshi Ito (University of Tokyo) and Ueda inquired about how to formulate monetary policy in a leaning-against-the-wind manner. White

5. For details, see McCallum (2010).
6. For details, see White (2010).
suggested expanding the Taylor rule to include useful indicators for imbalances, such as
the growth rate of credit and a spectrum of asset prices. However, he suggested ignoring
these terms until deviations from norms reached a certain magnitude.

V. Paper Presentation Sessions

A. Can Cross-Border Financial Markets Create Good Collateral in a Crisis?

Makoto Saito (Hitotsubashi University) presented a model in which a country-specific
catastrophic shock was shared between two countries in the presence of solvency con-
straints. Using the model, he explored whether markets could create collateral assets
(relatively safe bonds) in a crisis endogenously. Due to severe solvency constraints,
realized catastrophic shocks could not be covered fully by ex ante arrangements of ca-
tastrophe insurance. However, most uninsured shocks could be financed ex post by the
collateral asset created endogenously. As for the underlying mechanism, he explained, a
non-damaged country financed risky loans (Lucas tree) by issuing relatively safe bonds
to a damaged country. Such safe bonds served as high-quality collateral on the damaged
country to finance uncovered losses without violating solvency constraints.

In his comments, Maurice Obstfeld (University of California at Berkeley) pointed
out the unrealistically small ratio of dividends to labor endowment. He also noted that
the international risk-sharing did not occur not just in catastrophic environments, but in
normal ones. The second discussant, Mark M. Spiegel (Fed San Francisco), pointed
to plummeting consumption in Argentina and insolvency issues in Greece as facts
inconsistent with the model presented. He then indicated that holding the Lucas tree
enabled global risk-sharing and suggested introducing a country-specific Lucas tree.

From the floor, Gourinchas asked what would happen if equities were undervalued,
not overvalued. Saito answered that the overvalued case was more realistic. In reply to
Obstfeld, Saito noted that since a sufficient Lucas tree was a good risk-sharing device,
he had set a very low ratio of dividends to labor endowment. To avoid this aspect,
he proposed introducing a Lucas tree-specific shock or a country-specific shock. In
response to Spiegel, Saito argued that in some developed countries like Japan, despite
the major financial shock and the drop in GDP in 2007–09, consumption was relatively
stable. Finally, he admitted that insolvent cases fell beyond the scope of the model.

B. Exorbitant Privilege and Exorbitant Duty

Gourinchas coined the term “exorbitant duty” to accompany the existing idea of “ex-
orbitant privilege.” Exorbitant duty represented a deterioration in the U.S. net foreign
asset position in times of global stress, while exorbitant privilege represented a higher
return on U.S. external assets than payment for its external liabilities. He estimated
payments from the United States to the rest of the world to be approximately 19 percent
of U.S. GDP during the recent crisis from 2007 to 2009. To explain these observations,
he proposed a model for the center country in the international financial system. In this
model, the United States had more risk tolerance than the rest of the world, generating

7. For details, see Saito, Suzuki, and Yamada (2010).
8. For details, see Gourinchas, Rey, and Govillot (2010).
cross-country differentials in consumption patterns. Consequently, the United States acted as a provider of insurance against global shocks, collecting insurance premiums in good times while making insurance payments in times of crisis.

The first discussant, Kosuke Aoki (London School of Economics), commented that exorbitant duty was potentially inconsistent with two observations. First, the exchange rates of two major U.S. bond holders, Japan and China, had appreciated during the crisis, indicating that these countries had not received transfers from the United States. Second, in terms of consumption smoothing, the cross-country relationship between the U.S. bond holdings and consumption during the crisis had been unclear. The second discussant, Karolina Ekholm (Sveriges Riksbank), pointed out that global imbalances did not constitute an issue of concern if the exorbitant privilege hypothesis was correct and called for a deeper quantitative analysis.

From the floor, Obstfeld suggested incorporating economic growth and separating intertemporal substitutions and degree of risk aversion in the utility function. Gourinchas argued that incorporating economic growth under the current setting of the utility function generated the non-stationarity, but modifying the utility function appeared to resolve the problem. In response to Aoki, Gourinchas remarked that the focus of the paper was on the transfer from the United States to the rest of the world, not the receipt of a transfer in a specific country. Ito asked about the role of deleveraging of the U.S. financial institutions during the recent crisis.

C. Banking Globalization and International Business Cycles

Kozo Ueda (BOJ) presented a two-country dynamic stochastic general equilibrium model to examine the nature of the recent financial crisis and its immediate spread throughout the world due to the banking globalization. In the model, financial intermediaries (FIs) entered into chained credit contracts at home and abroad, engaging in cross-border lending to entrepreneurs by undertaking cross-border borrowing from investors. The FIs as well as the entrepreneurs in two countries were credit constrained, so their entire net worth mattered. Using the model, he argued that the FIs’ globalization, net worth shock, and credit constraints were the keys to understanding the recent crisis. Finally, for policy implications, he pointed out that the FIs’ globalization enhanced the spillover effects of domestic monetary and capital injection policy on the world economy.

In his comments, Christopher J. Waller (Fed St. Louis) suggested constructing a flexible price model and studying its behavior before extending it to a sticky price model. He pointed out that according to U.S. data, corporate retained earnings exceeded aggregate investment, which was inconsistent with the model’s assumption that investment had to be financed by borrowing. Finally, he cast doubts on the shock sustained by FIs as the driving source of the recent crisis, arguing that the main source of shocks was the eruption of severe information frictions.

From the floor, Kiyohiko G. Nishimura (BOJ) asked why a bilateral correlation for GDP was negative in the 1990s but positive in the 2000s. Ueda answered that the degree of bilateral correlations depended on the sources of the shocks and that the FIs’ net

9. For details, see Ueda (2010).
worth shock combined with increasing FIs’ globalization in the 2000s yielded the high bilateral correlation. Responding to Waller, Ueda remarked that his model was based on asymmetric information, thereby creating endogenous propagation mechanisms arising from information frictions. At the same time, he admitted difficulty in explaining the very nature of the shock sustained by FIs. Regarding the flexible price model, he referred to his previous paper. 10 Etsuro Shioji (Hitotsubashi University) inquired about the method for analyzing the foreign currency swap program using the model.

D. Globalization, Pass-Through, and Inflation Dynamic

Benigno presented a model in which globalization influenced inflation dynamics through more intense competition with foreign firms. In this model, domestic and foreign firms competed strategically to increase market share through pricing decisions. He showed that the progress of globalization, interpreted as an increase in the presence of foreign goods in the domestic market, increased the exchange rate pass-through. Moreover, globalization influenced inflation dynamics by changing the pricing strategies of domestic firms, modifying the slope and the position of the Phillips curve. He then presented empirical evidence that increased competition due to newcomers like China had increased the exchange rate pass-through, as the model would predict.

Shioji, the first discussant, began by introducing the long-standing debate in Japan about whether relative price changes, caused by an increase in imports of low priced goods from China, had lowered aggregate prices. In his view, the model provided clues to an explanation for such phenomena. He suggested incorporating intermediate goods in the model and strengthening the analysis in the empirics. The second discussant, Mark Wynne (Fed Dallas), cast doubts on the robustness of empirical evidence for the increase in exchange rate pass-through. He then remarked that firms in the model competed on the basis of price, while internationally active firms competed on the basis of innovation.

From the floor, White emphasized the effect on unit labor costs rather than on prices. In reply to Shioji and White, Benigno answered that both unit labor costs and intermediate goods were missing but important components. He agreed that the empirical evidence was as yet inconclusive. Aoki asked whether a permanent change in a foreign share in the model changed the degree of pass-through permanently, and whether the model was applied to Japan to estimate the length and scale of deflation. Benigno replied that the permanent change in the foreign share would change the steady state, and that the model made it possible to simulate conditions in Japan using linear approximations around a non-zero inflation steady state. Siklos asked about the effects of monetary policy on exchange rates and inflation dynamics; Obstfeld called for a general equilibrium model to analyze the effects. Shigenori Shiratsuka (BOJ) pointed to adjustments in the economic structure due to international competition as another channel linking relative price changes to general prices.

10. For details, see Hirakata, Sudo, and Ueda (2009).
11. For details, see Benigno and Faia (2010).
E. Financial Regulation Going Forward 12

Franklin Allen (University of Pennsylvania) argued that the recent crisis was primarily caused by housing price bubbles, and that housing price bubbles were caused by both easy monetary policy and the easy availability of credit. He then related easy credit conditions to global imbalances caused by the build-up of large foreign exchange reserves at Asian central banks. He suggested three reforms: first, financial regulations and government intervention needed to be based on a coherent intellectual framework for correcting market failures. Second, central banks needed to be subject to more checks and balances than currently. Third, the international financial framework needed to be reformed so that Asian countries could rely on it in crisis times, thereby reducing the need for the accumulation of foreign exchange reserves.

The first discussant, Ito, argued that regulatory failure was the most important factor of the three raised by Allen. He noted that although the Japanese experience in the late 1990s was similar to the recent U.S. experience, one aspect Japan had handled better than the United States was to quickly introduce a resolution mechanism for failed financial institutions through the Financial Reconstruction Law of 1998. The second discussant, Ceyla Pazarbasioglu (International Monetary Fund), pointed out that market failures led to misaligned incentives and, in turn, to unstable economic systems. She then proposed three measures of macroprudential response: countercyclical prudential measures to dampen cyclical swings; structural measures to reduce the probability and cost of financial institutions’ failures; and macroeconomic measures to respond to financial and global imbalances.

From the floor, Enrique Alberola (Bank of Spain) commented that Spain had not experienced the recent massive housing bubble or the resulting bursting, but that the damage on the real side of the economy had been dramatic and the financial system was poorly regulated and supervised. In reply to Alberola and Ito, Allen noted that he focused on the U.S. case, but that it was important to consider cases in other countries. Pierre Jaillet (Bank of France) asked about the net economic benefits of financial innovations after accounting for the costs generated by financial crises. Allen answered that financial innovations had contributed significantly to the economy. Wataru Takahashi (BOJ) pointed to two types of policy responses, ex ante and ex post, and argued that the latter was important to make use of the market mechanism. With respect to ex post actions, Hiroshi Nakaso (BOJ) pointed out that liquidation might simply degrade the asset quality of a failed bank over time, yielding large eventual losses.

VI. Policy Panel Discussion

In the panel discussion chaired by Obstfeld, Nakaso, Jordan, and Mário Mesquita (Banco Central do Brasil, former Deputy Governor for Economic Policy) stated their views on the future of central banking under globalization, touching on policy measures taken in response to the global financial crisis.

12. For details, see Allen and Carletti (2010).
A. Panelist Speeches

Nakaso discussed global capital flows, financial infrastructures, and implications for the future of central banking. First, regarding global capital flows, he presented evidence that developing countries in the recent crisis had withdrawn funds from European banks. Due to maturity and currency mismatches, European banks had faced severe shortages in their U.S. dollar holdings. Second, with respect to financial infrastructures, he pointed to the need for international coordination, explaining the scheme of the foreign currency swap program and the cross-border collateral arrangements. He asserted that these coordinated actions had functioned well in the recent crisis to ensure financial stability. Third, with respect to implications for the future of central banking, he proposed that central banks needed to assume a macroprudential perspective to continue improving financial infrastructures and to review the wider role in a global context of central banks as the lender of last resort. He concluded by claiming that central banks were best positioned to be aware of liquidity conditions in both domestic and foreign currencies, the solvency conditions of key players in financial system in their jurisdiction, and the microprudential conditions of individual institutions.

Jordan discussed the interactions of monetary policy and macroprudential policy. He began by pointing out that central banks had concentrated on price stability for many years, but that the recent crisis revealed a need for both macroeconomic and financial stability. To this end, he called for a new concept to address system-wide financial risks from a macroprudential policy perspective. He asserted two primary goals for macroprudential policy: to strengthen the resilience of the financial system and to prevent mounting imbalances in credit and/or asset prices. With respect to the instruments of macroprudential policy, he noted that the first goal was achieved mainly by microprudential instruments, whereas the second posed a much greater challenge. He pointed to the importance of a deep understanding of the relationship between microprudential policy, macroprudential policy, and monetary policy. Touching on the risk of undermining monetary policy independence due to an inseparable link between politics and prudential policy, he concluded that a realistic step would be to concentrate on a few instruments to counter pronounced imbalances in credit or asset markets.

Mesquita discussed the future of central banking from the perspective of emerging economies. He noted that central banks in mature economies tended to focus on price stability rather than financial stability, while central banks in emerging economies often had prudential responsibilities as well. He then argued that both monetary policy and prudential policy could play increasingly important roles in handling asset price and credit booms. He noted, however, that using monetary policy to deal with prudential risks was not straightforward. For example, in a policy trade-off, asset prices in Brazil had increased and currency had appreciated after the recent crisis. He then discussed unconventional policies in Brazil. To mitigate the severe liquidity squeeze, Banco Central do Brasil (BCB) had eased reserve requirements for private banks under the condition that they used the proceeds to buy assets from small banks and U.S. dollars from the BCB. The BCB had also sold part of the previously accumulated foreign exchange reserves during the crisis. He argued that reserves were useful because foreign policy measures like the foreign currency swap program would not necessarily have been granted for Brazil. Regarding the supervision activities of central banks, he
emphasized the potential conflict between monetary policy goals and prudential policy goals. He, however, noted that knowledge on the state of the financial system, required for the lender of last resort, could be achieved through involvement in direct supervision. He concluded that inflation targeting policy would persist, while emphasizing the need to monitor asset prices and credit conditions based on a consideration of their implications for financial and economic environments.

B. General Discussions

From the international perspective, Takahashi argued that as market integration with emerging economies gained pace, central banks were increasingly obligated to improve financial infrastructures and coordinate their policies from the practical and operational aspects, together with emerging economies. In reply, Nakaso pointed to the importance in policy coordination and financial stability of a forum like the Bank for International Settlements (BIS). Alberola inquired about the consequences of the large-scale supply of credit by public banks in Brazil. Mesquita answered that the market share of public banks had increased, but was likely to decline over time due to more aggressive lending by private banks. In response to a question from Obstfeld regarding the effectiveness of capital controls during the crisis, Mesquita indicated capital controls had been used frequently in Brazil to deter capital inflows, but had proved less effective than was hoped for by the authorities.

Regarding the relationship between monetary policy and prudential policy, White suggested distinguishing between microprudential and macroprudential regulatory authorities. David Archer (BIS) asked about the risks of impairing central bank independence through their greater involvement in regulatory and macroprudential policy. Jaillet pointed to a certain lack of clarity in the definition of macroprudential policy and suggested distinguishing macroprudential instruments from monetary policy instruments. In response, Jordan stated that central banks were inevitably active in certain aspects of macroprudential policy, even in the absence of a clear and unambiguous definition and risks of political intervention. Ito commented that the Financial Services Agency (FSA) in Japan handled microprudential regulation, while the BOJ held examination powers, and that these two agents worked well together. Nakaso added that Japan’s FSA handled microprudential policy, while the BOJ handled on-site examinations from a differing perspective as the lender of last resort. He also pointed out that the Financial Risks Management Committee, chaired by the Prime Minister and in which the Governor of the BOJ participated, played a key role in dealing with systemic risks by taking various extraordinary measures involving taxpayer money.

Regarding the implementation of macroprudential policy, Charles L. Evans (Fed Chicago) pointed to a potential new problem for central banks as they sought to achieve financial stability as inelastic risk premiums to risks. He cited the example in which inflation was anchored under an inflation targeting policy, leading to inelastic inflation dynamics to economic disturbances. Jordan suggested a need for deeper insights into unintended consequences when central banks sought to achieve financial stability under conditions of incomplete knowledge. Obstfeld argued for setting predictable rules to avoid blindsiding market participants. In response to Obstfeld, White observed that excessive transparency could be counterproductive, as in the case from 2003 to
2007, when the Fed had been explicit about its intentions, in turn encouraging markets to double up on leverage. Nakaso responded that although transparency was a difficult issue, it was less counterproductive than claimed by White, pointing out the role played by the transparent foreign currency swap program during the crisis. Mesquita responded that he supported a measure of constructive ambiguity, illustrating the risk of creating moral hazards if the corporate sector knew that the government bailed out the corporate sector in crisis using sufficient foreign exchange reserves, leading to excessive exposure of the corporate sector to foreign exchange risks.


APPENDIX 1: PROGRAM

Wednesday, May 26, 2010

Morning  Opening Session
Chairperson:  Kiyohiko G. Nishimura, Bank of Japan
Opening Remarks:  Masaaki Shirakawa, Bank of Japan
Ben S. Bernanke, Board of Governors of the
Federal Reserve System

Keynote Speech: The Future of Central Banking: A Lesson from
United States History
Chairperson:  Charles I. Plosser, Federal Reserve Bank of
Philadelphia
Keynote Speech:  Bennett T. McCallum, Carnegie Mellon University

Session 1: Can Cross-Border Financial Markets Create Good
Collateral in a Crisis?
Chairperson:  Charles I. Plosser, Federal Reserve Bank of
Philadelphia
Paper Presenter:  Makoto Saito, Hitotsubashi University
Discussant:  Maurice Obstfeld, University of California at
Berkeley
Discussant:  Mark M. Spiegel, Federal Reserve Bank of San
Francisco

Afternoon  Mayekawa Lecture: Some Alternative Perspectives on
Macroeconomic Theory and Some Policy Implications
Chairperson:  Kazuo Ueda, University of Tokyo
Lecturer:  William R. White, Organisation for Economic
Co-operation and Development

Session 2: Exorbitant Privilege and Exorbitant Duty
Chairperson:  Kazuo Ueda, University of Tokyo
Paper Presenter:  Pierre-Olivier Gourinchas, University of
California at Berkeley
Discussant:  Kosuke Aoki, London School of Economics
Discussant:  Karolina Ekholm, Sveriges Riksbank

Session 3: Banking Globalization and International Business Cycles
Chairperson:  M. R. Chatu Mongol Sonakul, Bank of Thailand
Paper Presenter:  Kozo Ueda, Bank of Japan
Discussant:  Christopher J. Waller, Federal Reserve Bank of
St. Louis
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<td>Session 5: Financial Regulation Going Forward</td>
<td>Charles L. Evans, Federal Reserve Bank of Chicago</td>
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<td>Policy Panel Discussion</td>
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