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Cryptocurrency and its Impact on Indian Economy

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Abstract

Cryptocurrency is an innovative concept of virtual/digital currency that has attracted substantial interest in last few years from the risk takers, profit seekers, general public and academic practitioners. Cryptocurrency is a digital currency designed to work as a medium of exchange through a computer network that is not reliant on any central authority, such as a RBI or government, to uphold or maintain it. Crypto typically use decentralized control as opposed to a Central Bank Digital Currency (CBDC). Crypto has turned out to be a new avenue of investment instrument in India similar to gold. The attributes of cryptocurrency framework like decentralized network, reduced dependency on cash, no intermediaries, and the lack of stable pricing factors do not let it unlock its true potential.

The Indian cryptocurrency economy has been ranked second in global cryptocurrency adoption, just behind Vietnam. The size of the crypto-tech market in India is anticipated to reach $241 million by 2030, growing at a CAGR of 14%, with the potential of creating 877,000 jobs by then. The crypto-tech ecosystem is developing rapidly with more than 230 startups mushrooming and almost $270 million invested in Indian block chain and crypto startups till 2021. About 1.8% of India’s adult population has invested in crypto until 2021, a growth of 2.2 × over a year.

This study focuses on understanding what cryptocurrency is all about and its overall impact on the Indian economy. The future of cryptocurrency is uncertain. The study also focuses on the existing scenario and future prospects of cryptocurrency in India.

Keywords: Crypto asset • Cryptocurrency • Virtual currency • Bit coin • Block chain technology • Decentralized digital assets

Introduction

A crypto/cryptocurrency is an internet based medium of exchange that executes financial transactions using cryptographic functions. Cryptocurrency makes use of block chain technology to achieve transparency, decentralization and immutability (the ability of a block chain ledger to remain unchanged, unaltered, and indelible).

With the speedy growth of Information and Communication Technologies (ICT), a lot of daily activities have been digitized and become more time saving and flexible. A lot of e-users have switched to the virtual world and cryptocurrency has created a new business phenomenon to promote trading, buying and selling digital assets. Crypto represents valuable and intangible objects used online in various networks and applications such as online games, social networks, P2P networks, and virtual worlds. Cryptocurrency has been used widely in different systems over the years [1].

Over in the recent past crypto has been a subject of discussion among the public at large. In the world of technological advancements, cryptocurrency is becoming more comfortable for investors who values privacy and creation of money. In these days cryptocurrencies such as Bitcoin, ethereum, Ripple, Litcoin, etc. are trending in the financial market as people are showing interest in buying cryptocurrencies. In a developing country like India, cryptocurrencies have a great potential to alter the financial status of both individuals and firms. Crypto can decrease processing costs and transaction cost which will help cross-border payments. This is beneficial to remittance payments, foreign trade, and peer to peer financing.

India is one of the world’s fastest developing cryptocurrency markets. According to a recent report, the cryptocurrency sector in India is growing the fastest worldwide. Its rate of development has been dramatically accelerating in recent years, outpacing that of certain other nations. The Indian government is not yet convinced about cryptocurrency. The government and the central bank of India are concerned about the various adverse effects of cryptocurrency. One among them was the role that crypto assets could play in supporting terrorism and money laundering.

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In 2017, the central bank of India issued a warning that digital currencies are not a legal tender in India. However, no ban on digital currencies took place. In 2019, RBI issued that mining, trading, holding or transferring/ use of cryptocurrencies is subject to punishment in India with a financial penalty or/and imprisonment up to 10 years. RBI also revealed that it may launch e-rupee/ digital rupee as a legal tender in India in future. In 2020, the Supreme Court of India removed the ban on cryptocurrencies imposed by RBI [2]. In 2022, the GOI clearly mentioned in the union budget 2022-23 that the transfer of any virtual currency/cryptocurrency asset will be subject to 30% tax deduction. Gifts in the form of virtual assets/cryptocurrencies will be taxed in the hands of the receiver. In July 2022, The RBI recommended a ban on cryptocurrencies citing 'destabilising effects' for the country's monetary and fiscal health.

List of private cryptocurrency in India

In today's market, various private cryptocurrencies exist in India. Despite being the most famous cryptocurrency, government organisations still use Bitcoin (BTC) (Figure 1).

Here is the private cryptocurrencies list in India. They are:

- Bitcoin (BTC)
- Tether (USDT)
- Ripple (XRP)
- Shiba Inu (SHIB)
- Litecoin (LTC)
- Elrond (EGLD)
- USD Coin (USDC)
- Ethereum (ETH)
- Ripple (XRP)
- Dogecoin (DOGE)

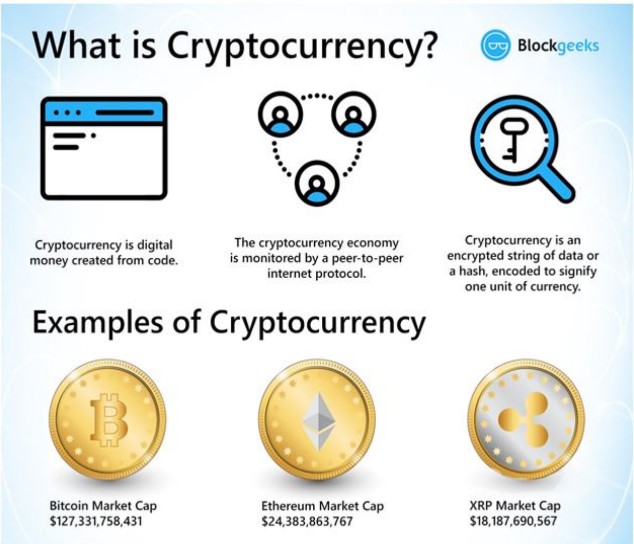

Figure 1. Definition and examples of cryptocurrency.

Terminologies used

Cryptocurrency: It is digital money. It is considered to be more secure that the real money.

Cryptography: It is a method of converting comprehensible data into complicated codes which are tough to crack.

Block chain: A block chain is a collection of linked blocks from the most current one to the genesis block (Figure 2).

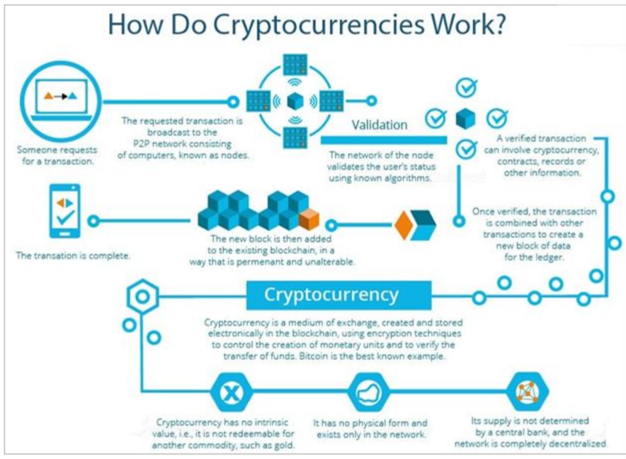

Figure 2. Workflow of crypto currencies.

Benefits of cryptocurrency

- **Inherent security:** Use of pseudonyms and ledger systems conceals the identities.
- **Low transaction cost:** Very low fees and charges for transactions.
- **Lack of interference from the banking system:** Outside ambit of banking systems.
- **Lower entry barriers:** No entry barriers, unlike conventional banking systems.
- **Universal recognition:** Lots of cryptocurrencies and acceptable in many nations.

Objectives

- To study the current status and future prospects of cryptocurrency in India.
- To evaluate the impact of cryptocurrency on Indian economy.

Literature Review

Methodology: To fulfil the above research objectives, this study is based on secondary data collected from various reliable online sources, such as high impact journals, research papers, news articles, and other trusted platforms [3].

- Brenig and Muller conducted an economic analysis of "money laundering" with cryptocurrencies which are decentralised and convertible digital currencies relying on cryptography. According to them, the rising popularity of cryptocurrencies is seeking the attention of scholars and practitioners, especially due to increasing concerns on money laundering incidents. They explained the process of money laundering and existing anti-money laundering measures. It helps in analysing transactional and contextual factors about the influence on benefits of using it for money laundering by cyber criminals.
- Wonglimpiyarat highlights that there are obstacles of lawless tender where Bitcoin wants the government's legislation to boost the permissibility of this new currency. Bitcoin (BTC) currency

may transform the future of banking in developing countries but it is hard to substitute a cash based society.

- Kurihara and Fukushima, explained, it is not digital cash, which has prevailed all over the world. Unlike government and central bank issued currency, Bitcoin can be inflated at will; the supply of Bitcoin is limited to a certain volume, which cannot be changed.
- Mallick and Mallick determined the relation between the official "Indian Currencies foreign exchange rates or ICX (GBP, USD, YEN, EURO, etc.)" and cryptocurrencies like "Binance Coin", "Litecoin", Ethereum and Bitcoin with daily analysis during December 17, 2019 to June, 17, 2021. There is a "crucial positive relationship" between "Binance Coin and Ethereum" with Bitcoin, "Binance Coin and Bitcoin" with Ethereum, "Binance Coin" with Litecoin, and Litecoin with "Binance Coin". There is a negative relation between Litecoin and USD. Hence, Litecoin can be useful for diversification and hedging. There is also minimal impact on crypto markets from foreign exchange markets in India, maybe because of the lack of a legal framework for recognition by the government. It also causes lack of public acceptability.
- Cryptocurrency exchange Kucoin published a report on India's cryptocurrency ecosystem. It features the results of a survey, conducted from October 2021 to June 2022, which the company described as "an in-depth look into the development of the blockchain industry and crypto space" in India. The survey respondents were 2,042 Indian adults aged 18 to 60, the company explained, adding that 1,541 of them were self-identifying crypto investors and 501 were crypto-curious consumers, who were interested in investing in cryptocurrency in the coming six months.
- Kurihara and Fukushima, explained, it is not digital cash, which has prevailed all over the world. Unlike central bank and government issued currency, Bitcoin can be inflated at will, the supply of Bitcoin is limited to a certain volume, which cannot be changed [4].

Present status and future prospects of cryptocurrencies in India

Crypto is now known as digital gold. But stakes are always high in crypto investment. The price of one bitcoin was only $123 in October 2013. As of Jan 2021, its price has crossed a whopping US$ 34,000. Gold is also a valuable asset in India. Currently, the price of 10 g of 24 k gold has crossed Rs. 50,000. A person might have doubled the investment by investing in gold, while bitcoin has given 340 times more return over the years. This is known as "Digital gold" for a reason. There are so many crypto banks in India that have started operating here like. Vault, Kasa, and Easyfi Network. According to Vault's CEO, they have provided around $25 billion as loan.

A physical crypto bank has also been established "Unicas" with the merger of "Cashaa" and Gujarat and Rajasthan. If someone has Ripple, Bitcoin, or any cryptocurrency, they can get up to 50% loan of the existing market price of crypto by giving cryptocurrency as security. It is due to the fact that cryptocurrency is highly volatile and subject to fluctuation. There is no set timeline for returning the loan, though the borrower needs to pay interest [5].

Banks usually charge up to 24% of interest, while crypto banks charge up to 15% of interest on cryptocurrency with up to 5% of processing fee. This is why cryptocurrency stands out. In addition, the loan process is also very simple in cryptocurrency and there is no bar on CRISIL scores and creditworthiness. There is 4% interest on keeping crypto in the banks. That the ban on cryptocurrency and introduction of RBI's digital currency will raise a lot of concerns to the investors.

Like in other countries, cryptocurrencies have become popular also in India due to the highest volume of INR being traded in crypto after demonetization. The Indian Rupee dominated crypto has generated the third largest volume followed by USD and Yen. The demonetization in 2016 may have implemented cryptocurrencies amongst a huge population but realities started coming out quickly with subdued growth in the Indian market. India has only 2% of contribution to the global market capitalization of cryptocurrency, despite being ranked second in population after China. There are few limitations of cryptocurrencies in India, such as:

- Security and trust.
- Market risks.
- No regulation.
- Taxability issues.
- KYC rule and volatility of prices.

Security and Trust-Being the digital mode of transaction, cryptocurrency has been cryptocurrencies available. All of them don't result in good returns for investors. The cryptocurrencies have become popular in India due to the highest volume of INR being traded in crypto after demonetization. The Indian Rupee dominated crypto has generated the third largest volume followed by USD and Yen. The demonetization in 2016 may have implemented cryptocurrencies amongst a huge population but realities started coming out quickly with subdued growth in the Indian market.

No regulations-though other countries have already taken some actions regarding the cryptocurrencies available. All of them don't result in good returns for investors. India has only 2% of contribution to the global market capitalization of cryptocurrency, despite being ranked second in population after China. According to the Global Crypto Adoption index furnished by Chainalysis, the worldwide use of cryptocurrencies will increase by 880% in 2021. India ranked second after Vietnam, with an index score of 0.37. The Indian cryptocurrency market increased by 641% in a single year. The global cryptocurrency business has a lot of promise and is developing quickly. It appears to be a potential sector for India as well. The probability of cryptocurrencies replacing fiat money is relatively low. Instead, there can be a peaceful coexistence of cryptocurrencies and fiat money in the future. It will help individuals and firms use any money they choose for various purposes [6].

The Indian crypto economy has been ranked second in global cryptocurrency adoption, just behind Vietnam. According to Chainalysis, for ranking, it considered three metrics. These include-on-chain value received, the on-chain retail value received and P2P exchange trade volume.

Vietnam ranks first place with an index score of 1.00. India comes in at second position with an index score of 0.37, just ahead of Pakistan with an index score of 0.37. India's relatively high score on the P2P exchange trade volume metric contributed to its high ranking (Figure 3).

India Ranks 2nd On The Global Crypto Adoption Index

Country	Index score	Overall index ranking	Ranking for individual weighted metrics feeding into Global Crypto Adoption Index		
			On-chain value received	On-chain retail value received	P2P exchange trade volume
Vietnam	1.00	1	4	2	3
India	0.37	2	2	3	72
Pakistan	0.36	3	11	12	8
Ukraine	0.29	4	6	5	40
Kenya	0.28	5	41	28	1
Nigeria	0.26	6	15	10	18
Venezuela	0.25	7	29	22	6
United States	0.22	8	3	4	109
Togo	0.19	9	47	42	2

Source: Chainalysis

Inc42

Figure 3. India ranks 2nd on the global cryptoadoption index.

Based on the metrics such as on-chain DeFi value received, on-chain number of DeFi deposits and on-chain retail DeFi value received, India has been ranked 6th in the Global DeFi Index by Chainalysis. In the last few months, India has seen the rise of several startups and the venture investments recorded by the startups in the DeFi segment [7].

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India Ranked 6th In The Global DeFi Adoption Index

Country	Index score	Overall index ranking	Ranking for individual weighted metrics feeding into Global DeFi Adoption Index		
			On-chain DeFi value received	On-chain number of DeFi deposits	On-chain retail DeFi value received
United States	1.00	1	3	47	4
Vietnam	0.82	2	4	64	3
Thailand	0.68	3	5	46	5
China	0.62	4	2	113	2
United Kingdom	0.60	5	9	40	6
India	0.59	6	1	120	1
Netherlands	0.55	7	24	11	18
Canada	0.52	8	17	30	15
Ukraine	0.49	9	11	50	7
Poland	0.46	10	18	36	17

Source: Chainalysis

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Figure 4. India ranked 6th in the global defiadoption index.

India record high growth in crypto value received

In terms of the cryptocurrency value received, India recorded the highest growth compared to Pakistan and Vietnam. And in terms of currencies, Ethereum and wETH make the highest share in India compared to Pakistan and Vietnam (Figure 5).

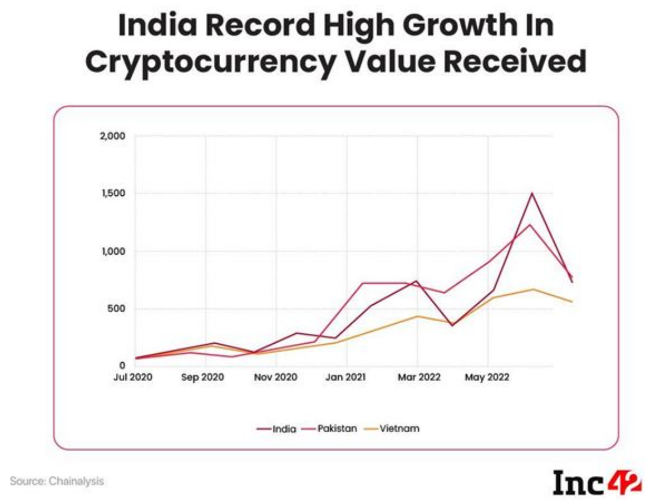

Figure 5. India record high growth in cryptocurrency value received.

Cryptocurrency market size in India

The size of the crypto-tech market in India is anticipated to reach $ 241 million by 2030 growing at a CAGR of 14%, with the potential of creating 8,77,000 jobs by then US$ Billion (Figure 6).

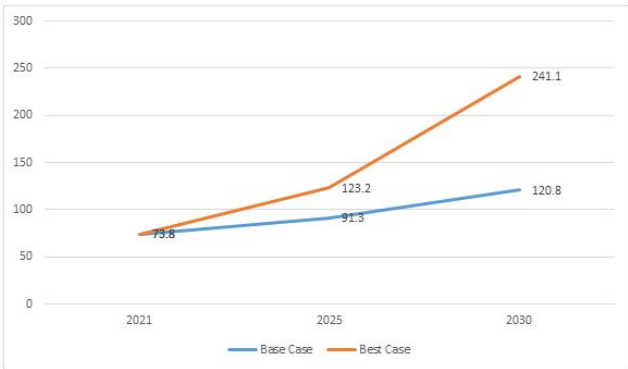

Figure 6. The size of the crypto-tech market in India.

Base case growth and adoption of CryptoTech in India continue at the current rate based on specified factors. Best case growth and adoption of CryptoTech in India accelerates rapidly with two-sided growth-higher demand-pull and investments in development and maturity of CryptoTech.

Cryptocurrency market investments in India

Retail investors in India have invested $6.6 billion in crypto assets, which is estimated to increase to $15.6 billion by 2030. US$ Billion (Figure 7).

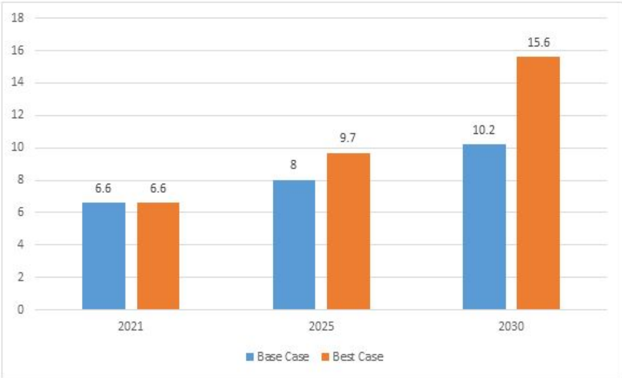

Figure 7. Growth and adoption of CryptoTech in India.

Base case growth and adoption of CryptoTech in India continue at the current rate based on specified factors. Best case growth and adoption of CryptoTech in India accelerates rapidly with two sided growth higher demand-pull and investments in development and maturity of CryptoTech.

The future of crypto market in India is rich with possibilities. With the right set of incentives and regulations, cryptocurrencies and blockchain technology have the potential to fuel India's goal of becoming an atmanirbhar.

Discussion

The impact of crypto currencies on Indian economy

India is a developing country and hence has a large economy to manage. Although most few economists have managed to express their views on the legalization of cryptocurrency in India, it is expected to bring more positive impacts on our economy. Most of the new investors and entrepreneurs have enunciated their happiness as it will allow widening their business horizon.

Following are the five significant impacts crypto currencies will have on the Indian economy:

Positive impact

Employment growth: The crypto industry currently employs about 50,000 individuals. As per a recent report, the industry is poised to see massive employment opportunities, pegged at over 800,000 by 2030. India already has a strong talent pool of Fitch professionals and IT experts. Additionally, the talent is available at cost-effective rates. With the rise of the cryptocurrency market, we can see India becoming a major hub and global destination for the cryptocurrency market. This will help create ample job opportunities in the BFSI, IT, customer support and service, and many other industries. In today's times, the cryptocurrency market continues to lead to improving the employment rate across the nation.

Transparency improvement: Cryptocurrency enhances transparency where every transaction can be traced back to the source. Additionally block chain, the technology on which cryptocurrency is based, is immutable. This means that transaction histories are permanent and unalterable. This can help bring down corruption significantly as the data cannot be altered by any means.

Achieve the goal of Atmanirbhar Bharat: With the government proposing the creation of a single, officially-recognized cryptocurrency, the dependence on third-party, private, and foreign-based cryptocurrency will be eliminated. Currently, popular cryptocurrencies like Bitcoin, Ethereum, Dogecoin, and others are foreign-based. The official cryptocurrency will be completely developed in the country and will forgo the need to depend on other cryptocurrencies. Investors, traders, and other individuals will have a single cryptocurrency for their needs and help the government fulfill their goal of 'Atmanirbhar Bharat' in the cryptocurrency sector.

Enhance digital payments: Cryptocurrency transactions are both time and cost-effective. The transactions are carried out between the sender and receiver without the need of a third party, making the transactions instantaneous. Additionally, the transaction charges levied by intermediaries like banks and payment gateways are eliminated. This helps bring down the cost of the transaction, helping save money on each transaction. Thus, cryptocurrency transactions can significantly enhance digital payments, bringing down the time and cost of each transaction.

Boost to the FinTech sector: As mentioned earlier, India already has a strong base of IT professionals. The collaboration of IT and the financial sector can bring endless possibilities in terms of business opportunities and overseas cash influx. Additionally, with the government bringing strong regulatory measures and creating laws for an official digital currency, it will attract huge foreign investments. This will provide a huge boost to the FinTech sector and propel the Indian economy forward.

Negative impact

Bad for investors: No carry forward losses will be a setback for investors as cryptocurrencies are highly volatile. This fear will always discourage investors (specifically retail investors) from trading in cryptocurrencies. The high tax slab will cut down the net profit of investors and with effect from 1st April 2023, the 115BBH provisions on income generated from virtual currencies will be in force.

Dilemma: Imposing tax on cryptocurrencies does not completely and explicitly declare cryptocurrencies legal because income tax in India is subject to assets not on the method/ manner of acquiring those assets.

Bad for Indian banking system: The Reserve Bank of India officials said it will have a negative impact on the Indian banking system as these being attractive assets people may invest their hard-earned savings in these currencies which may result in banks having lesser resources to lend. Also, in the long-term, the cryptos bubble will burst and would lead to the loss of hard-earned savings of the general public, the officials warned.

Way forward

Defining cryptocurrency: Cryptocurrencies should be explicitly defined as securities or other financial instruments under the relevant national laws.

Linking startup ecosystem with crypto: India's startup ecosystem can be revitalized by cryptocurrency and block chain which can create job opportunities, from block chain developers to designers, project managers and business analysts to promoters and marketers.

India towards CBDC: The finance minister of India announced the introduction of a Central Bank Digital Currency (CBDC) for India in the form of digital rupee/e-rupee. It will give a huge boost to the Indian digital economy.

Digital currency/E-currency will also lead to a more efficient and cheaper currency management system. However, central bank digital currency should exist in harmony with other crypto currencies to reap the full benefits of the block chain technology.

Regulation: is required to prevent serious problems, to ensure that cryptocurrencies are not misused, and to protect unsuspecting investors from excessive market volatility and potential scams. The regulation must be lucid, transparent, and coherent, and it must be animated by a vision of what it seeks to achieve. A legal and regulatory framework must elucidate crypto currencies as securities or other financial instruments under applicable national laws and identify the regulatory authority in charge.

Conclusion

The government of India should take a stand in the world of cryptocurrency as it has huge potential to bring technological revolution to the country. The tax on cryptocurrency gains also adds up to a huge sum of direct taxes which goes to the I-T department which can further push the overall growth of the economy. The Indian government should look forward to regulating it instead of announcing the blanket ban. There is a need to make it transparent, safer and more reliable. Citizens should be more aware of the overall functioning of cryptocurrency to invest more on it, especially in India which stands second in terms of population. cryptocurrency holds a bright future which is encouraging about e-investments, e-business, and e-payments. Laws must be made about crypto currencies, considering several legal, financial aspects towards a more consumer friendly and secure system.

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