

## Bitcoin Research

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Gil Luria  
(213) 688-4501  
gil.luria@wedbush.com

Aaron Turner  
(213) 688-4429  
aaron.turner@wedbush.com

### Embracing Volatility: Trading as Bitcoin's First Killer App

- **We see investing and trading bitcoin as one of the first major applications of crypto currency and believe increased investment and trading activity is helping create the payment network infrastructure and monetary base that will facilitate increased economic activity in the future.**
- **We believe investors value bitcoin based as a weighted average of potential outcomes that can range between \$0/bitcoin to \$1,000,000/bitcoin (see illustration on page 2).** The negative outcome would be if bitcoin were to be overtaken at any point by a superior altcoin or somehow succumb to an unforeseen vulnerability, and the positive outcome would represent a scenario in which bitcoin became the global working capital of trade.
- **This broad set of outcomes means any small change in perception regarding the likelihood of the best case outcome drives significant changes to current valuation.** Said otherwise, if market perception of the likelihood of the best case outcome changes by 0.01%, that could drive a \$100 change in current valuation, or >10% in today's prices. This is different than most other financial instruments that have a far narrower range of outcomes, which in turn, create more stable values (page 2).
- **This would imply volatility in the price of bitcoin may not go away anytime soon, as the potential for bitcoin is being constantly measured by the market in light of rapid technology development and unpredictable regulatory constraints.** However, we do not believe this volatility, in itself, will impede the growth of bitcoin technology and ecosystem.
- **We believe traders value volatility as they continue to gravitate to bitcoin trading as an active 24/7 market uncorrelated with other asset class returns. The connection between volatility and trading volumes is well established in equities (page 3) and is beginning to emerge in bitcoin trading.** Our conversation with bitcoin traders (and Wall Street traders trading bitcoin) lead us to believe they see opportunity in a market that has frequent disruptive news flow and large movements that reflect that news flow. We believe that as exchanges become more robust, secure and transparent, liquidity begets liquidity, and this trading activity will continue to draw more traders. We expect this activity to continue to draw more sophisticated tools borrowed from the equities trading world – such as derivatives, margin trading and computer trading – all of which have contributed volatility in the equities markets.
- **Since economic activity (sale of goods & services, money remittance, P2P) is intermingled with trading activity, we believe the trading activity is helping create the network capacity and monetary base to support the future economic applications of bitcoin.** As “first wave” bitcoin applications such as remittance, online payments and micropayments mature, we expect them to make up an increasingly large proportion of overall transaction volumes. In the meantime, investment and trading have “paid” for the hundreds of millions of network equipment (i.e., mining equipment) and iterative refinements of the bitcoin code.
- **Volatility in the price of bitcoin should not impede retailer acceptance of bitcoin, in our opinion, as merchants and payment processors are entirely shielded, and we expect consumers will be shielded in the future.** Since retailers have the choice of receiving the same dollar amount as the items are listed for into their bank account, and payment processors have the ability to hedge real-time, both are already free from volatility risk. We expect wallet providers such as Coinbase and Circle to work on solutions that will allow consumers (as opposed to investors/traders) to hold only a limited amount of bitcoin in their wallet and still be able to benefit from the simplicity of using bitcoin and incentives retailers will share with them as they reduce the cost of payment acceptance from 3% to <1%. Just as consumers carry a certain amount of cash in their physical wallets in spite of commonly using payment cards, consumers may hold a certain amount of bitcoin in a digital wallet for online transactions, and have that balance replenished by the wallet provider out of their bank account.

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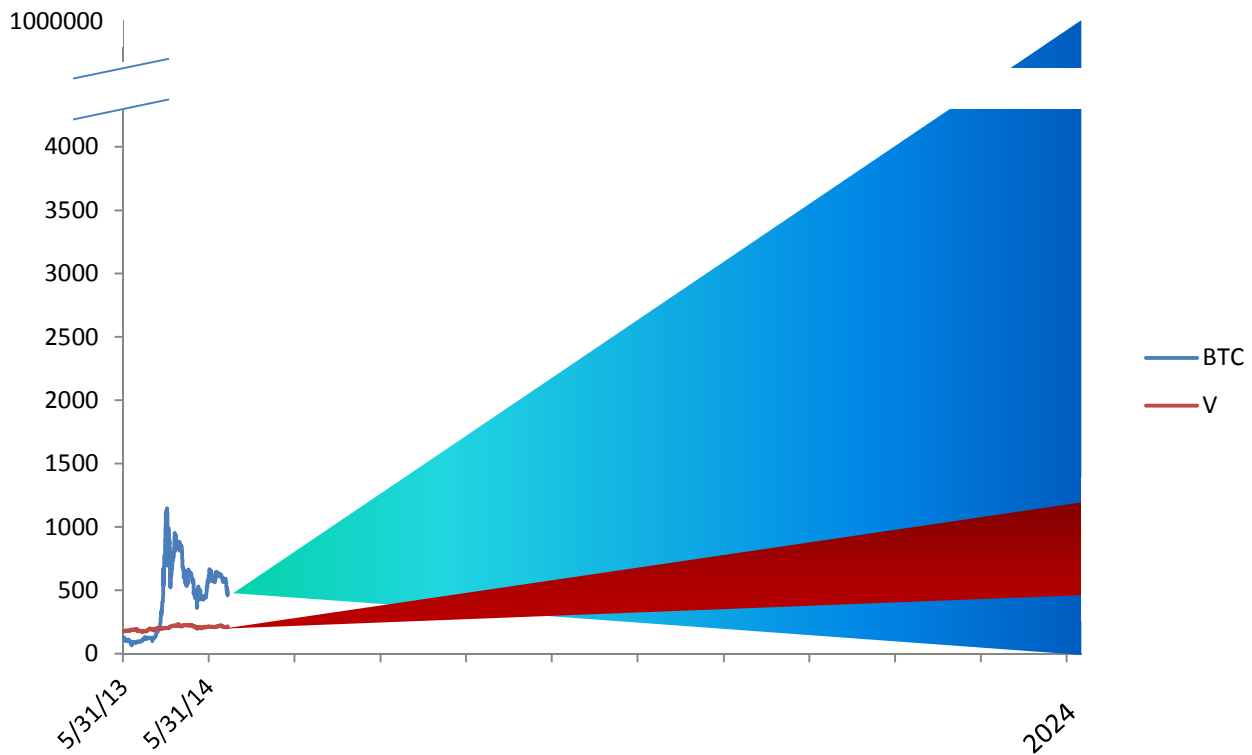
**Additional Analysis**

**Figure 1: Bitcoin Valuation Framework**

	Outcome	\$/BTC	Probability	Probability Weighted
"Napster" Outcome	- Overtaken by another coin - Fatal flaw uncovered - Broadly made illegal with strict enforcement	\$0	50.00%	\$0.00
"Segway" Outcome	- Specific use cases take hold (e.g. remittance, micro transactions, machine-to-machine, etc.)	\$1,000	49.95%	\$499.50
"Internet" Outcome	- Bitcoin becomes global working capital of trade (\$20 trillion monetary base)	\$1,000,000	0.05%	\$500.00
<b>Probability-weighted outcome</b>				<b>\$999.50</b>

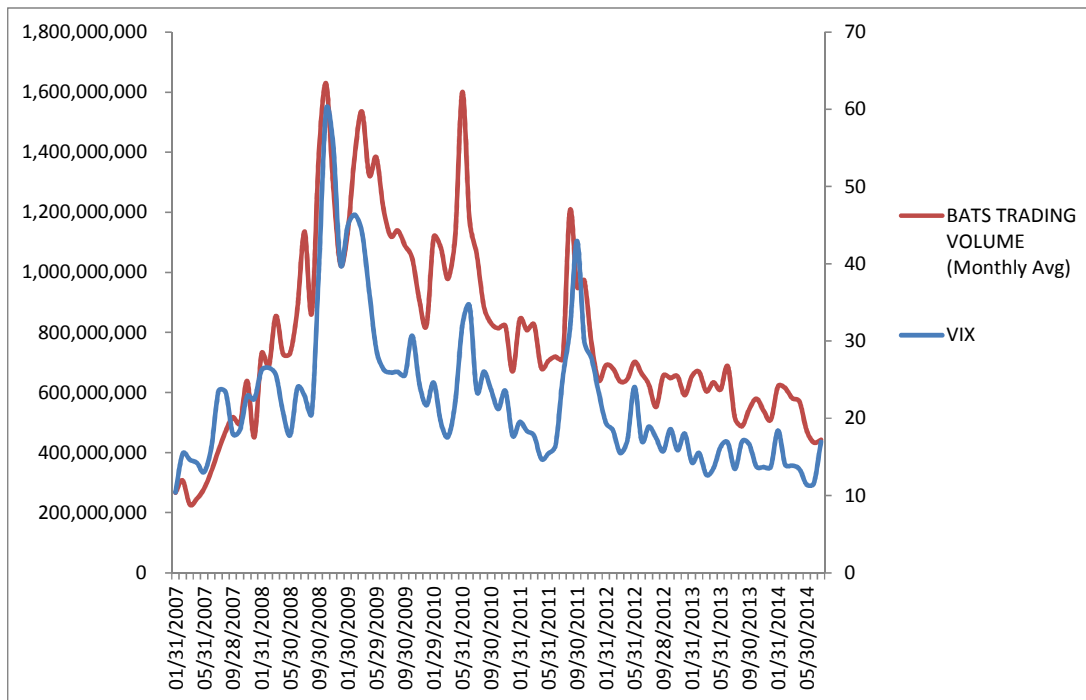
Source: Wedbush Securities, Inc.

**Figure 2: Range of Outcomes Comparison between Bitcoin and Visa**



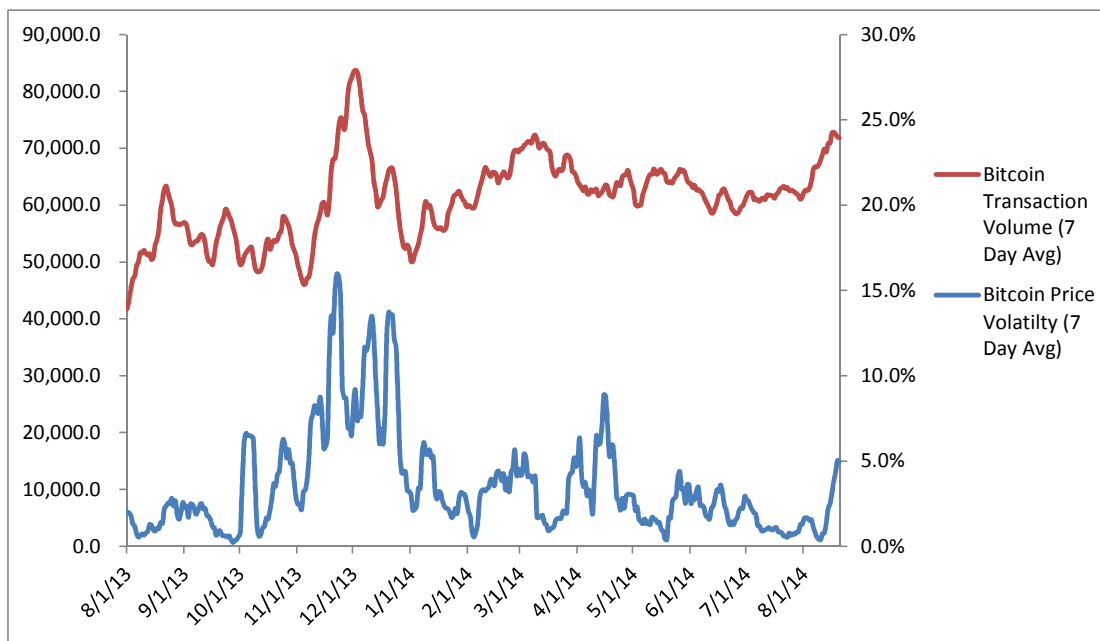
Source: Company data, Wedbush Securities, Inc.

**Figure 3: Equities Trading Volume and Volatility**



Source: BATS, CBOE, Wedbush Securities, Inc.

**Figure 4: Bitcoin Trading Volume and Volatility**



Source: Blockchain.info, Coindesk, Wedbush Securities, Inc.

**Analyst Certification**

I, Gil Luria, Aaron Turner, certify that the views expressed in this report accurately reflect my personal opinion and that I have not and will not, directly or indirectly, receive compensation or other payments in connection with my specific recommendations or views contained in this report.

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## EQUITY RESEARCH DEPARTMENT

(213) 688-4529

### DIRECTOR OF RESEARCH

Mark D. Benson (213) 688-4435

### MANAGER, RESEARCH OPERATIONS

Ellen Kang (213) 688-4529

---

#### RETAIL AND CONSUMER

---

##### Consumer Products

Rommel T. Dionisio (212) 938-9934  
Alicia Reese (212) 938-9927

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Corinna Freedman (212) 688-9876

##### Healthy Lifestyles

Kurt M. Frederick, CFA CPA (415) 274-6822  
Alicia Reese (212) 938-9927

##### Restaurants

Nick Setyan (213) 688-4519  
Colin Radke (213) 688-6624

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Joan L. Storms, CFA (213) 688-4537  
John Garrett, CFA (213) 688-4523

Seth Basham, CFA (212) 938-9954

##### Specialty Retail: Softlines

Morry Brown (213) 688-4311  
Taryn Kuida (213) 688-4505

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---

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Al Kaschalk (213) 688-4539

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James Kim (213) 688-4380

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Shyam Patil, CFA (213) 688-8062  
Andy Cheng (213) 688-4548

##### Computer Services: Financial Technology

Gil B. Luria (213) 688-4501  
Aaron Turner (213) 688-4429

##### Enterprise Software

Steve Koenig (415) 274-6801  
Kevin Ikeda (213) 688-4423

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Michael Pachter (213) 688-4474  
Nick McKay (213) 688-4343  
Nick Citrin (213) 688-4495

##### Entertainment: Software

Michael Pachter (213) 688-4474  
Nick McKay (213) 688-4343  
Nick Citrin (213) 688-4495

##### Internet: Media and Gaming

Michael Pachter (213) 688-4474  
Nick McKay (213) 688-4343  
Nick Citrin (213) 688-4495

##### Internet: Social Media, Advertising & Technology

Shyam Patil, CFA (213) 688-8062  
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James Dix, CFA (213) 688-4315

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Michael Pachter (213) 688-4474  
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Betsy Van Hees (415) 274-6869  
Ryan Jue, CFA (415) 263-6669

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---

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Dilip Joseph (415) 273-7308

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Liana Moussatos, Ph.D. (415) 263-6626

##### Healthcare Services - Managed Care

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1000 Wilshire Blvd., Los Angeles, CA 90017-2465

Tel: (213) 688-8000 www.wedbush.com

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