



# **VEGA ECONOMICS**

**Case Studies and Select Analyses**

## Who We Are

Vega Economics is an economic consulting firm specialized in providing expert testimony and data analysis. Our team and network of academic and industry professionals deliver exceptional quantitative solutions for litigation and consulting engagements. We maximize our clients' likelihood of success by helping them navigate complex economic issues. Vega has earned our reputation for excellence through our innovative problem-solving, comprehensive client support, and meticulously executed reports.

## Trusted by Our Clients

Our clients include large financial institutions, government agencies, insurance companies, institutional investors, and the law firms who represent them. We have long-standing relationships with many of our clients, who count on us for outstanding service and unparalleled expertise.

## What We Offer

Vega Economics helps our clients find the best experts and supports those experts with carefully executed quantitative analyses.



We work with a network of academics, industry practitioners, and former regulators to deliver the best expert witnesses for our clients.



We provide continuous, on-demand litigation support, as well as timely and thoughtful economic analysis.



We design complex quantitative analyses and present them in clear and compelling terms.



We tailor our analysis to the unique circumstances of each assignment and ensure it can withstand scrutiny.



We use advanced technology and computing resources to perform our analyses accurately and efficiently.



We manage structured and unstructured data to help our clients achieve favorable outcomes.

The following case studies and analyses illustrate why our clients choose Vega Economics.





# Continuous, On-Demand Litigation Support

Vega is known for our exceptional client service. Our team provides direct, responsive support to counsel to answer questions, perform calculations, and help assess the economic impact of issues as they arise. Vega works alongside our clients to ensure the best possible outcomes.

As an example, Vega was engaged to provide litigation support and support expert report creation for several parallel breach of contract matters.

The client frequently requested Vega's help during all phases of this engagement, and we provided prompt and thoughtful responses to ensure the client had the information it needed to effectively litigate the matters.

## Prior to Expert Discovery

- We created presentations for counsel, helping educate client teams on core economic concepts. Our client relied on these concepts to develop case strategy.
- We constructed automated tools to monitor and evaluate the performance of at-issue securities. These tools continuously provided Vega and counsel with relevant and reliable information.
- We aided counsel in evaluating claims and the corresponding exposure.
- We researched and performed preliminary data analysis for claims and arguments anticipated to appear in the plaintiffs' expert reports.

**Client Contact Prior to Expert Discovery**



## During Expert Discovery

- We supported the creation of multiple expert reports.
- We reviewed analyses and results across expert reports to identify potential conflicting opinions.
- We identified incomplete production from the opposing experts and assisted counsel in drafting requests for additional materials.
- We enabled collaboration between economic and legal teams by translating highly technical models for counsel.
- We prepared expert witness for deposition by compiling study materials and conducting mock deposition sessions.
- We prepared counsel for opposing expert depositions, enabling counsel to pursue key admissions and build a useful record.

**Client Contact During Expert Discovery**



## Post Expert Discovery

- We aided in drafting motions for summary judgement.
- We prepared demonstratives for mock jury exercises.
- We reviewed and provided feedback to counsel in drafting support and opposition for motions to exclude.
- We prepared and supported sur-replies and declarations from both experts and counsel.

**Client Contact Post Expert Discovery**





## Clear & Effective Quantitative Analysis

Vega provides complex quantitative analysis and presents our results in a clear and understandable way for maximum impact.

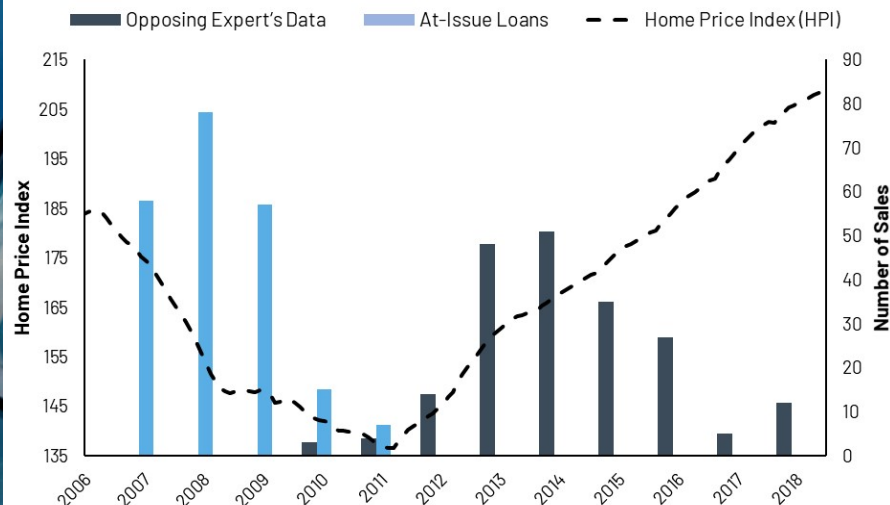
As an example, Vega Economics was engaged in a series of cases regarding RMBS servicing and master servicing to support multiple industry experts and a damages expert.

In support of the damages expert, the Vega team reviewed and rebutted assumptions in the opposing experts' damages methodology and recalculated damages using the servicing expert's input.

## Demonstrating Flaws in the Opposing Expert's Underlying Model Data

The Vega team analyzed the underlying performance data used by the opposing expert. We presented a rebuttal analysis showing this data was not representative of the time period at-issue. House prices were increasing in the period captured by the opposing expert's data but decreasing in the at-issue period.

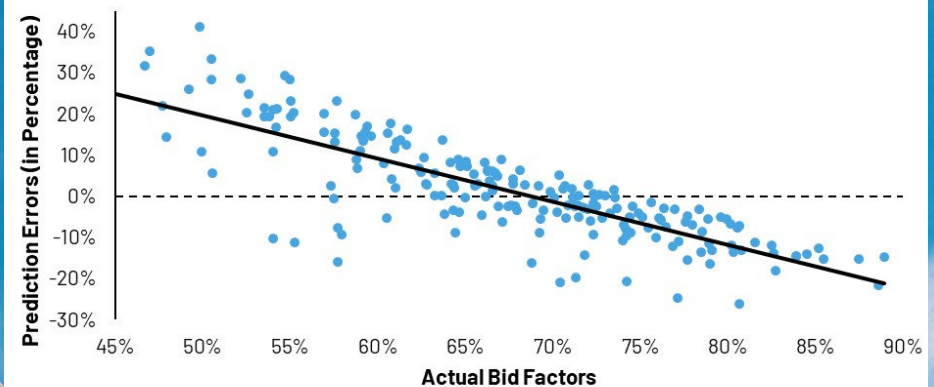
### The Opposing Expert's Data Differs from At-Issue Loans



## Showing Errors in the Opposing Expert's Model

The opposing expert created a model that predicted a "bid factor" for loan sale prices. Using quantitative analysis, Vega determined that the model was mis-specified, leading to incorrect conclusions.

### The Opposing Expert's Model Is Mis-Specified



By comparing real-world outcomes with the model's predicted outcomes, Vega demonstrated that the opposing expert's model predictions were not accurate. This graph includes a trendline. If the model were accurate, the trendline would be perfectly horizontal and centered on the dotted line at 0%. Because it is not, the model was mis-specified.

## Creating a Meticulously-Executed Report

Vega collaborated with the expert and counsel to create a report that clearly explained the quantitative and conceptual errors in the opposing experts' analyses in a clear and compelling fashion.

The Vega team created numerous exhibits and visualizations presenting the analyses and results showing that the opposing expert's model did not correctly reflect damages caused by Vega's client.

The final report contained:



**88 pages** that  
carefully explained  
the expert's opinions



**32 exhibits** with  
clear visualizations  
and analysis results.



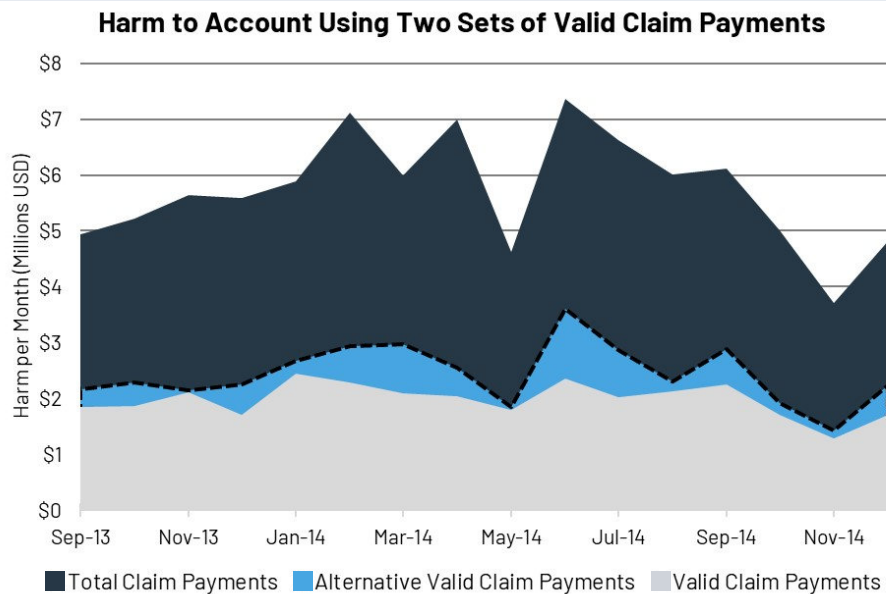


## Customized Analysis That Withstands Scrutiny

Vega creates engagement-specific analyses built on fundamental economic principles. We ensure that each analysis is tailored to the needs and strategy of our clients and can withstand scrutiny, whether in litigation or non-litigation contexts.

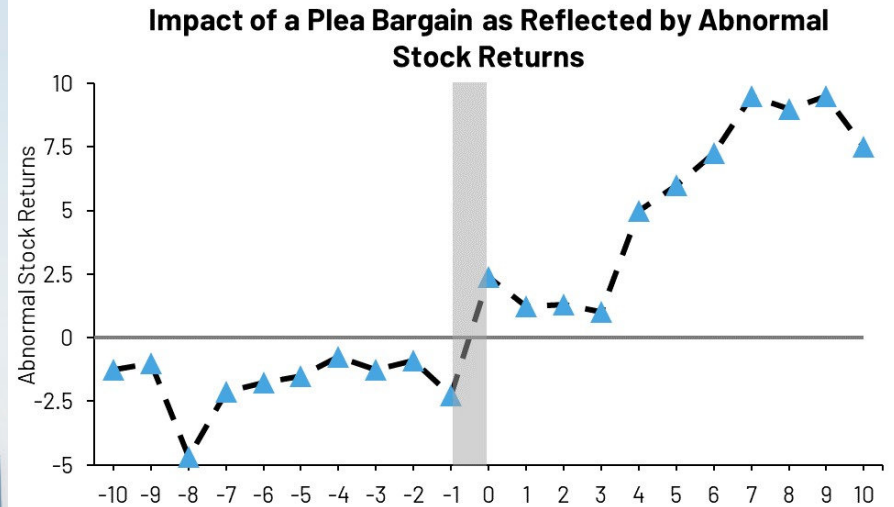
The following examples illustrate analyses Vega implemented outside of a litigation context based on client-specific requests.

**Sampling and Damages Analysis for an Arbitration:** The Vega team supported two experts in an arbitration proceeding involving inappropriate claim payments on extended service plans for mobile phones, e-readers, and other technological devices. The engagement involved forming representative samples of claims for auditing and quantifying damages resulting from the allegedly unjustified claims payments.



The Vega team calculated and graphed the monthly and cumulative harm to the relevant account, using two alternate sets of valid claim payments.

**Event Study for Insider Trading Investigation:** Vega helped a client respond to a government investigation of insider trading by performing an empirical analysis of the impact of plea bargains on stock market returns using an event study approach.



The graph shows that, for the depicted company, abnormal stock returns increased after the announcement of a plea agreement. Vega assessed such results for many companies to determine whether there was a statistically significant impact of plea agreements on stock returns.

**Intellectual Property Valuation:** Vega assisted a client by valuing the patent for a virtual 3D tour technology used by online real estate brokerages. To do so, Vega analyzed how the technology contributed to website traffic and conversion rates for a specific online brokerage and calculated profits with and without the presence of the patented technology.

**Government Investigation Regarding Due Diligence:** Vega was retained to assist a client during an investigation by reviewing thousands of pre-securitization documents and analyzing the client's due diligence process for several hundred RMBS. Vega also evaluated the disclosure of silent-second mortgages, the assignment of EV ratings, and the suitability and application of published due diligence sampling procedures.



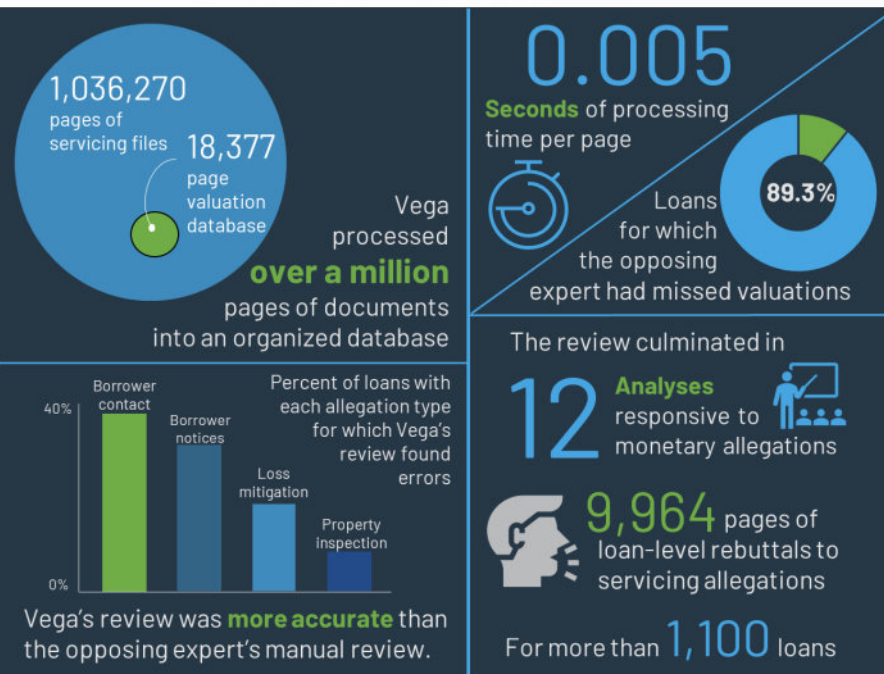
## Analyses Powered by Cutting-Edge Technology

Vega harnesses the power of our advanced computing resources to deliver faster and more accurate results.

As an example of this, Vega was engaged to perform a file review of millions of pages of mortgage servicing histories for more than 1,100 loans and create related rebuttal analyses.

### Designing a Better File Review Process

To streamline the file review, Vega custom-built computer code and supplemented the resulting automated process with specialized reviewers. The hybrid system of automated and manual review resulted in a faster and more accurate extraction, categorization, and analysis of all the relevant data. During the file review, Vega identified a large number of relevant documents and data points that had been missed by the opposing expert's purely manual review.



## A Consistent, Top-Down Approach

In a fully-manual file review, each reviewer must apply judgment, which leads to inconsistent results. Vega's approach instead implemented the expert's opinions using an automated process and then used specialized reviewers to verify the output. This ensured that each loan was treated in the same way, and that the expert's methodology and opinions were applied consistently throughout.

⬇️ Vega's Top-Down Approach



## Presenting Comprehensive and Accurate File Review Results

Vega's review culminated in over 1,100 loan-level descriptions detailing the servicing history of each loan that were responsive to the opposing expert's allegations. We also designed concise summary exhibits with findings responsive to each allegation.

### Example Results: Loss Mitigation Types Discussed with Borrowers

Monthly Mortgage Payments Made by Borrower	Selected Loss Mitigation Types Discussed		
	Repayment Plan	Short Sale	Modification/Forbearance
Less Than 12 Months	41%	53%	45%
Between 12 and 24 Months	41%	57%	68%
More Than or Equal to 24 Months	43%	50%	81%

\*Results have been modified to preserve client confidentiality.

In this example, Vega's file review determined whether certain loss mitigation options were discussed with each borrower. We found that the servicer was more likely to discuss modification and forbearance with borrowers who had made more monthly mortgage payments.





## Achieving Favorable Results from Complex Data

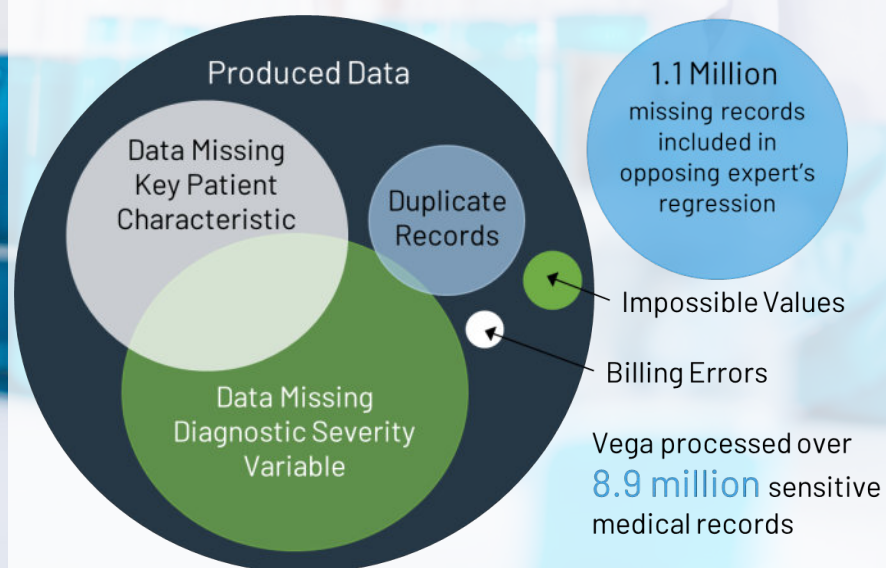
By managing complex datasets and developing creative, client-focused solutions, the Vega team helps our clients achieve superior results.

As an example, Vega consulted in the pre-litigation and litigation stages for an engagement regarding a healthcare billing dispute. The analysis involved reviewing health insurance data and assessing the opposing side's damages model.

### Managing Complex Medical Claims Data

Vega performed a querying analysis to detect potential errors and inconsistencies in the insurance provider's multi-terabyte database.

Vega modelled whether the provider had been appropriately compared to its competitors, accounting for negotiated reimbursement rates, billing efficiency, and quality of care.



## Reducing Claimed Damages Using Quantitative Analysis

In pre-litigation, the insurance provider used a regression model to calculate claimed damages. Vega analyzed the insurance provider's computer code, data, and findings.

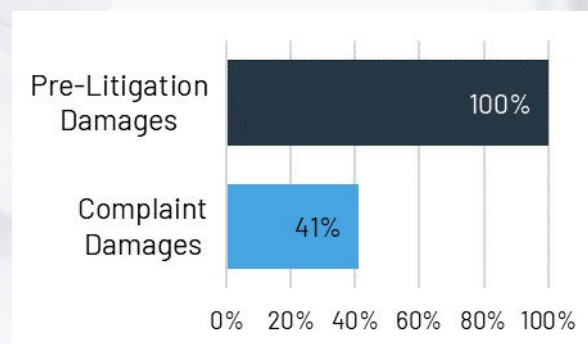
We uncovered a number of errors in the model that invalidated the plaintiff's result. Specifically, our team repeated the plaintiff's analysis after correcting a classification error and adding a number of controls proposed in relevant academic research. The result of these changes was that the coefficient changed from positive to negative. This indicated that the defendant had not overcharged for services, but rather that it had billed less than other providers given the circumstances. Our result was highly statistically significant.

### Results of Vega's Quantitative Analysis

	Plaintiff Analysis	Vega Analysis
Coefficient Indicating Overbilling Amount Per Episode of Care <sup>1, 2</sup>	6,000***	-1,500***
1. * 10% significant, ** 5% significant, *** 1% significant.		
2. Coefficients have been rounded to preserve client confidentiality.		

After receiving these critiques in the pre-litigation stage of the case, the plaintiff made significant changes to its analysis for litigation.

After revisions, the damages claimed by plaintiff in its complaint were only 41% of the damages that had originally been claimed in pre-litigation.



We continued to provide support in the discovery stage to further assist the client after the complaint was filed.



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