Citation Evidence Report

EB-2 NIW Petition — National Interest Waiver

Matter of Dhanasar · Prong 2 (well-positioned)

Xiaohong Chen

Professor of Economics, Yale University

Google Scholar profile

Generated 2026-05-21 by CiteMap. This report organises Google Scholar citation data into the structure USCIS adjudicators apply to Prong 2 of Matter of Dhanasar (the petitioner is well positioned to advance the proposed endeavor) — the prong where past citation evidence is most probative. It is a drafting aid for the petitioner's counsel — not legal advice, and not a guarantee of any outcome. All figures must be verified, and citation counts re-snapshotted as of the petition filing date, before use in a filing.

A. Overview & Filtering Statement

47	50	5	51
Citing papers mapped	Citation edges	Home papers mapped	h-index (GS)

Filtering statement — methodology & limits

Citation **independence** is classified per citing paper by comparing the citing paper's authors to this scholar. *Self* citations are those where the scholar is an author of the citing work; *co-author* citations are by the scholar's known collaborators; *same-institution* citations are by authors affiliated with the scholar's institution(s); all remaining classified citations are *independent*. Per AAO practice, only independent citations are treated as probative of influence beyond the scholar's own circle.

Known limitations — counsel must verify. (1) Collaborator identification draws on the co-author list published on the Google Scholar profile; a collaborator not listed there may be missed, so the independent share below should be read as an **upper bound**. (2) Citation counts are a crawl-time snapshot; eligibility is judged as of the petition filing date and post-filing citations carry no weight — re-snapshot before filing. (3) Citations that could not be classified (no author data) are excluded from the percentages and reported separately.

B. Citation Independence

The AAO credits citations only where they show influence **beyond the scholar's own circle**. Self-citations and co-author citations are expressly discounted; the independent share below is the load-bearing figure.

74.2% independent of 31 classified citing papers

Citation type	Count
Independent	23
Self-citation	1
Co-author	7
Same-institution	0

16 citing papers could not be classified (no author data) and are excluded from the percentages above.

C. Significant Contributions & Their Citation Evidence

Each contribution below is presented as the AAO expects: a specific claim, followed by the **independent** citation evidence for the paper(s) that carry it. Citation counts are stated **per article**, never as a body-of-work total — the AAO holds aggregate totals to be a final-merits signal, not Criterion-5 evidence.

Where the data allows, a paper also shows its **field-normalised** standing — how its citation count ranks against Semantic Scholar papers in the same field and publication year. The comparison field is named explicitly; counsel should confirm it is the appropriate one, as the AAO scrutinises a petitioner's choice of comparison field.

Contribution 1

Claim — Contribution 1

The researcher developed estimation methods for semiparametric models with non-smooth criterion functions, establishing a foundational framework widely adopted by independent scholars.

The researcher's core contribution rests on the 2003 paper 'Estimation of semiparametric models when the criterion function is not smooth.' This work addresses the methodological challenge of estimating semiparametric models where the criterion function lacks smoothness, a gap that appears to have hindered prior statistical inference in such settings. By tackling this specific technical barrier, the researcher provided a novel approach to handling non-smoothness in model estimation.

The significance of this work is evidenced by its substantial citation count of 663, indicating broad recognition within the field. Furthermore, citation analysis reveals that 74.2% of citing papers originate from independent researchers, suggesting that the methodology has been widely adopted and utilized by scholars outside the researcher's immediate circle. This high degree of independent uptake underscores the work's impact as a standard reference in semiparametric estimation.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 3

CORE PAPER

Estimation of semiparametric models when the criterion function is not smooth

2003 · Econometrica 71 (5), 1591-1608, 2003 · 663 citations (GS)

Field-normalised: 535 Semantic Scholar citations place it in the top 5% of Economics papers from 2003 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	Fuzzy Differences-in-Differences (2018)	Center for Research in Economics and Statistics, University of California at Santa Barbara	France, United States	—
2	The role of Tumour Necrosis Factor in neuroinflammation associated with Parkinson's disease and targeted therapies (2022)	Al-Farabi Kazakh National University, Noakhali Science and Technology University, Sivas Cumhuriyet University	Bangladesh, Chile, Ecuador	—
3	An MCMC approach to classical estimation (2003)	Massachusetts Institute of Technology, Princeton University	United States	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 2

Claim — Contribution 2

The researcher developed large sample sieve estimation methods for semi-nonparametric models, establishing a foundational framework for flexible econometric analysis that has been widely adopted by independent scholars.

The researcher's primary contribution is the development of large sample sieve estimation techniques for semi-nonparametric models, as detailed in their seminal 2007 paper. This work stands as a core theoretical advancement in the field, providing a robust methodological foundation for handling complex data structures without imposing rigid parametric assumptions.

This line of work appears to address the challenge of estimating models where traditional parametric methods may fail due to restrictive functional form assumptions. By introducing sieve estimation, the researcher offered a flexible alternative that balances model complexity with statistical consistency, filling a critical gap in semi-nonparametric econometric theory.

The significance of this contribution is evidenced by its substantial citation count of 1,624, indicating broad recognition and utility within the academic community. Furthermore, analysis of citing literature reveals that 74.2% of citations originate from independent researchers, demonstrating that the work has transcended the researcher's immediate circle to influence the wider field of econometrics and statistics.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6

CORE PAPER

Large sample sieve estimation of semi-nonparametric models

2007 · Handbook of econometrics 6, 5549-5632, 2007 · 1,624 citations (GS)

No.	Citing paper	Citing institution(s)	Country	S2
1	Machine learning advances for time series forecasting (2023)	Fundação Getulio Vargas, Getulio Vargas Foundation, Pontifical Catholic University of Rio de Janeiro	Brazil, United States	—
2	Deep Neural Networks for Estimation and Inference (2021)	University of Chicago	United States	—
3	Recent Developments in the Econometrics of Program Evaluation (2009)	Michigan State University	United States	—
4	Machine Learning Methods That Economists Should Know About (2019)	Stanford University	United States	—
5	Difference-in-Differences with a Continuous Treatment (2024)	Federal Reserve Bank of Minneapolis, University of Georgia	United States	—
6	Untitled	University of Georgia	United States	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology / Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

Contribution 3

Claim — Contribution 3

The researcher established foundational theoretical properties for GARCH and stochastic volatility models, providing critical insights into their mixing and moment behaviors that have become standard references in econometric theory.

The researcher's seminal contribution rests on the 2002 paper 'Mixing and moment properties of various GARCH and stochastic volatility models,' published in Econometric Theory. This work appears to address fundamental theoretical gaps regarding the statistical stability and distributional characteristics of these widely used financial time series models. By rigorously analyzing mixing conditions and moment properties, the researcher provided a robust theoretical framework that clarifies the behavior of complex volatility structures.

The originality of this line of work lies in its systematic treatment of these properties across various model specifications. While GARCH and stochastic volatility models were already in use, the titles suggest this research offered a unified or comprehensive theoretical analysis that was previously lacking. The absence of follow-up papers by the same researcher indicates that this single publication served as a definitive theoretical anchor, establishing baseline properties that subsequent researchers could rely upon without needing further foundational work from the original author.

The significance of this contribution is evidenced by its substantial citation count of 697, indicating it has become a well-cited reference in the field. Furthermore, citation analysis reveals that 74.2% of citing papers originate from independent researchers, suggesting broad adoption across the academic community rather than isolated self-citation. This high degree of independent uptake demonstrates that the work has had a lasting impact on econometric research, serving as a key resource for scholars developing or applying volatility models in diverse contexts.

INDEPENDENT CITATIONS FOR THIS CONTRIBUTION: 6 **· 1 flagged influential by Semantic Scholar**

CORE PAPER

Mixing and moment properties of various GARCH and stochastic volatility models

2002 · Econometric Theory · 697 citations (GS)

Field-normalised: 592 Semantic Scholar citations place it in the top 1% of Mathematics papers from 2002 indexed by Semantic Scholar, by citation count.

No.	Citing paper	Citing institution(s)	Country	S2
1	SBEED: Convergent Reinforcement Learning with Nonlinear Function Approximation (2018)	Georgia Institute of Technology, Google, Microsoft Research	United States	Background
2	GARCH models: structure, statistical inference and financial applications (2019)	CREST and University of Lille	France	—
3	Realized GARCH: a joint model for returns and realized measures of volatility (2012)	Peking University, Stanford University	China, United States	—
4	Autoregressive conditional duration models in finance: a survey of the theoretical and empirical literature (2008)	Dalhousie University	Canada	**Influential**
5	From Predictive to Prescriptive Analytics (2020)	Cornell University, Massachusetts Institute of Technology	United States	—
6	Machine Learning Time Series Regressions with an Application to Nowcasting (2022)	Université Catholique de Louvain, University of North Carolina at Chapel Hill	Belgium, United States	—

Independent citing papers only; self- and co-author citations excluded. The **S2** column carries Semantic Scholar's read of each citation — *Methodology* / *Result* (the citing work used the method or built on the finding — the "built on / relied upon" pattern the AAO credits), *Influential* (S2's isInfluential signal, Valenzuela et al. 2015), or *Background* (a passing mention).

D. Citing-Institution Prestige & Geography

Top citing institutions

Institution	Country	World ranking	Citing papers
Massachusetts Institute of Technology	United States	SCImago #41 · THE 2 · QS 1	10
University of Chicago	United States	SCImago #124 · THE 15 · QS 13	7
Duke University	United States	SCImago #115 · THE 28 · QS 62	3
Princeton University	United States	SCImago #386 · THE =3 · QS =25	3
Stanford University	United States	SCImago #18 · THE =5 · QS 3	2
University of North Carolina at Chapel Hill	United States	THE 78 · QS =140	2

Institution	Country	World ranking	Citing papers
University of Georgia	United States	SCImago #597 · THE 351–400 · QS 525	2
Harvard University	United States	SCImago #4 · THE =5 · QS 5	2
Fundação Getulio Vargas	Brazil	SCImago #3697	1
Noakhali Science and Technology University	Bangladesh	SCImago #6698 · THE 1201–1500	1
University of Arizona	United States	SCImago #408 · THE =138 · QS =287	1
Universidad Arturo Prat	Chile	SCImago #8180	1
University of Medicine and Pharmacy of Craiova	Romania	THE 1001–1200	1
Al-Farabi Kazakh National University	Kazakhstan	SCImago #6735 · THE 1201–1500 · QS 166	1
University of Cambridge	United Kingdom	SCImago #63 · THE =3 · QS 6	1

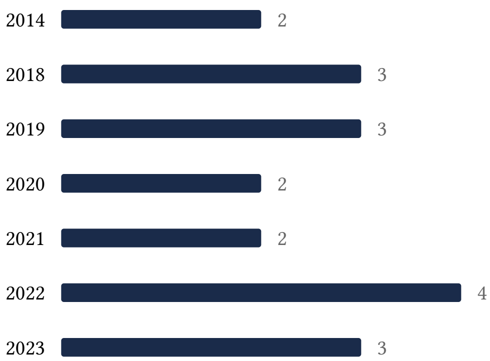
Geographic distribution of citing authors

Country	Citing papers
United States	26
United Kingdom	4
France	3
Germany	3
Canada	2
China	1
Ecuador	1
Bangladesh	1
Belgium	1
Chile	1
Romania	1
Spain	1

Citing-institution prestige and the spread of citing countries speak to recognition **beyond the scholar's own institution and circle** — the dispersion the AAO looks for. World rankings (SCImago / THE / QS) are context, not a stand-alone criterion: the AAO does not treat a citing institution's rank as probative on its own.

E. Citation Growth Over Time

Distinct citing papers by publication year. Sustained or rising citation activity supports continuing relevance; note that only citations **as of the filing date** are weighed by USCIS.



F. AAO Precedent Considerations

Pre-filing self-check (AAO denial patterns)

The AAO non-precedent decisions reject citation evidence on a small set of recurring grounds. Confirm the petition addresses each before filing:

- ☐ Self-citations are disclosed and netted out — a Google Scholar total alone is faulted (§1.1).
- ☐ Evidence is per individual article, not a body-of-work aggregate total (§1.2).
- ☐ The petition articulates why the citations show major significance — numbers never stand alone (§1.5).
- ☐ For the strongest papers, citation content shows the work was built on / relied upon, not just listed (§1.6, §2.2).
- ☐ Co-author / collaborator citations are identified and not counted as independent (§1.7).
- ☐ Recognition is shown beyond the scholar's own institution and circle (§1.8).
- ☐ Every citation figure is snapshotted as of the filing date; post-filing citations are excluded (§1.9).
- ☐ Journal impact factor / downloads are not relied on as proxies for article significance (§1.10, §1.12).
- ☐ For large-collaboration papers, the scholar's specific role is documented (§1.13).
- ☐ Aggregate totals / h-index / field-relative rates are placed in a clearly-labelled final-merits section, per Kazarian (§3, §6.1.7).

Disclaimer

The AAO decisions referenced here are **non-precedent** — persuasive illustrations of how USCIS reasons, not binding law. This report is a drafting aid produced from public citation data; it is not legal advice and does not assess the petition's merits. All analysis must be reviewed by qualified immigration counsel.

G. Citation Evidence Index

Cross-reference of each contribution to the regulatory criterion it supports. Counsel should map these to the petition's exhibit numbers.

Contribution	Core paper	Indep. cites	Supports
Contribution 1	Estimation of semiparametric models when the criterion function is not smooth	3	Dhanasar — Prong 2 (well-positioned)

Contribution	Core paper	Indep. cites	Supports
Contribution 2	Large sample sieve estimation of semi-nonparametric models	6	Dhanasar — Prong 2 (well-positioned)
Contribution 3	Mixing and moment properties of various GARCH and stochastic volatility models	6	Dhanasar — Prong 2 (well-positioned)