



# MINNESOTA BOARD OF PHARMACY



**Advisory Task Force on  
Technician Duties and Scope of Practice**

Signup ends 8/24/2025

January 12, 2026

# Introductions

## Duties and Autonomy:

- **Alyssa Freund** - health system technician
- **Sara Lindeen** - health system technician
- **Alyssa Nielsen\*** - health system pharmacist
- **Kimball Blake\*** - health system pharmacist
- **Samantha Schmitz** - state technician

## Minimum Qualifications:

- **Mike Waldt\*^** - health system pharmacist
- **Sharon Su** - health system pharmacist
- **Wade Hanson** - community technician
- **Katie Hagen** - community pharmacist
- **Cassandra Doyle\*** - community technician

## Ratio and Supervision:

- **Rachel Root** - health system pharmacist
- **Joshua Teeters\*** - infusion pharmacist
- **Roseann Hines** - health system pharmacist
- **Robin Hammer\*** - health system technician
- **Michelle Aytay^** - community pharmacist

## Key:

- \* - small group leads
- ^ - task force leads

# Minnesota Board of Pharmacy - Mission

The Minnesota Board of Pharmacy exists to promote, preserve, and protect the public health, safety, and welfare by fostering the safe distribution of pharmaceuticals and the provision of quality pharmaceutical care to the citizens of Minnesota.

Powers and Duties: <https://www.revisor.mn.gov/statutes/cite/151.06>

# Task Force - Charter

## Purpose

- To evaluate and **identify best practice** considerations regarding the use of pharmacy support personnel
- To consider and ensure recommendations are applicable to **all licensee locations** where pharmacy support personnel are utilized.
- To **make pharmacy practice recommendations** related to the use of Registered Pharmacy Technicians and other support personnel in the practice and operation of pharmacies to the Minnesota Board of Pharmacy for consideration in further actions by the Board

# Task force - Structure and Process

- **Composition:** Up to 15 members, including Minnesota licensed pharmacists and registered pharmacy technicians.
- **Initial Organization:** Members divided into three small groups; members selected topics for in-depth research.
- **Small Group Work:** Topics researched and refined within small groups.
- **Large Group Review:** Findings presented to the full committee for further discussion and refinement.
- **Consensus Building:** Task force members surveyed to assess alignment.

# Task Force - Goals and Objectives

## Goals and Objectives:

- To identify, compare, and evaluate legal language and policies of other states
- To review and report on stakeholder and public suggestions regarding the topic
- To evaluate existing rules, regulations, and allowances for conflicts in current scope and authority
- To document language changes to the current rule 6800.3850
- To account for and maintain citations or locations of source material, if not individual work product
- To evaluate appropriate levels or ratios of support personnel
- To evaluate qualifications required for the supervision of support personnel
- To evaluate either level of autonomy or limits upon duties for support personnel
- To evaluate the impact of proposed changes in scope of duties for support personnel
- To indicate minimum competency requirements for support personnel in the duties proposed
- To evaluate opportunities for education, programs, and credentialing available to pharmacy support personnel



# MINNESOTA BOARD OF PHARMACY



# Recommendations

# Task Force – Recommendations

- Task force members will present their topics
- Please hold comments until the end
- Task Force - Level of Consensus
  - 100% → unanimous
  - $\geq 90\%$  → very strong support
  - $\geq 75\%$  → strong support
  - $\geq 60\%$  → moderate support
  - $< 60\%$  → mixed support

# Technician Board of Pharmacy Member

## Recommendation:

- Add a dedicated Pharmacy Technician seat to the Minnesota Board of Pharmacy.

## Background:

- Pharmacy technicians (7,110) are the largest group overseen by the MN Board of Pharmacy with no current representation.
- National Association of Boards of Pharmacy (NABP) urges technician inclusion into Boards of Pharmacy (Resolution 119-4-23) .
- 23 states have technicians on their board; 3 have two seats.

## Taskforce level of consensus:

- Unanimous.

### References

- NABP Resolution 119-4-23 – <https://nabp.pharmacy/news-resources/resources/reports/annual-meeting-reports/expanding-pharmacy-technician-seats-on-state-boards-of-pharmacy-resolution>
- MN DEED Pharmacy Technician Stats – [https://apps.deed.state.mn.us/lmi/oes/Details/DetailsOccupationData?code=292052&geog=NEMN\\_US\\_MN](https://apps.deed.state.mn.us/lmi/oes/Details/DetailsOccupationData?code=292052&geog=NEMN_US_MN)
- MN DEED Pharmacist Stats – <https://apps.deed.state.mn.us/lmi/oes/Details/DetailsOccupationData?code=291051&geog=MN>
- PTCB Workforce White Paper – <https://ptcb.org/wp-content/uploads/2025/03/The-State-of-the-Pharmacy-Technician-Workforce-White-Paper-by-PTCB.pdf>
- Pharmacy Times Technician Governance – <https://www.pharmacytimes.com/view/pharmacy-technicians-serving-on-state-boards-expanding-roles-and-shaping-the-future>
- North Dakota Board of Pharmacy – <https://www.nodakpharmacy.com>
- Tennessee Board of Pharmacy – <https://www.tn.gov/health/health-program-areas/health-professional-boards/pharmacy-board/pharmacy-board/members.html>
- Texas State Board of Pharmacy – <https://www.pharmacy.texas.gov/about/members>
- Wyoming Board of Pharmacy – <https://pharmacyboard.wyo.gov/board/board-members>
- Arizona State Board of Pharmacy – <https://www.azleg.gov/ars/32/01902.htm>
- Illinois Board of Pharmacy – <https://idfpr.illinois.gov/profs/boards/pharmacy.html>
- Iowa Board of Pharmacy – <https://dial.iowa.gov/about-dial/boards/pharmacy>
- Massachusetts Board of Pharmacy – <https://www.mass.gov/info-details/members-and-vacant-board-seats-of-the-board-of-registration-in-pharmacy>
- Michigan Board of Pharmacy – <https://legislature.mi.gov/Laws/MCL?objectName=mcl-333-17721>
- Montana Board of Pharmacy – <https://boards.bsd.dli.mt.gov/pharmacy>
- Oregon Board of Pharmacy – <https://www.oregon.gov/pharmacy/Pages/Board-Members.aspx>
- Vermont Board of Pharmacy – [https://governor.vermont.gov/humanservices/boards\\_and\\_commissions/pharmacy](https://governor.vermont.gov/humanservices/boards_and_commissions/pharmacy)

# Medication History

## Recommendation:

- Allow pharmacy technicians to complete medication histories in acute and institutional settings, with pharmacist review and written procedures for auditing and compliance.

## Background:

- Studies show technicians are capable and proficient in gathering medication histories.
- Aligns with ISMP recommendations to allow pharmacy staff to handle medication histories instead of less specialized personnel.

## Taskforce Level of Consensus:

- Unanimous.

### References:

- Minnesota statute 151.102: <https://www.revisor.mn.gov/statutes/cite/151.102>
- Minnesota Rule 6800.3850: <https://www.revisor.mn.gov/rules/6800.3850/>
- Minnesota Rule 6800.3950: <https://www.revisor.mn.gov/rules/6800.3950/>
- ISMP Volume 30 Issue 23: <https://home.ecri.org/products/ismp-medication-safety-alert-%C2%AE-acute-care-newsletter-2025-single-issues?variant=51769787842924>
- 6800.3110 - <https://www.revisor.mn.gov/rules/6800.3110/>
- Irwin AN, Ham Y, Gerrity TM. Expanded Roles for Pharmacy Technicians in the Medication Reconciliation Process: A Qualitative Review. *Hosp Pharm*. 2017 Jan;52(1):44-53. doi: 10.1310/hpj5201-44.
- Arrison W, Merritt E, Powell A. Comparing medication histories obtained by pharmacy technicians and nursing staff in the emergency department. *Res Social Adm Pharm*. 2020 Oct;16(10):1398-1400. doi: 10.1016/j.sapharm.2020.01.009.
- Markovic M, Mathis AS, Ghin HL, Gardiner M, Fahim G. A Comparison of Medication Histories Obtained by a Pharmacy Technician Versus Nurses in the Emergency Department. *P T*. 2017 Jan;42(1):41-46.

# Registration Portability

## Recommendation:

- Allow technicians in good standing from other states who have at least 1 year of experience in the past 5 years to be registered as a pharmacy technician in MN.

## Background:

- Multiple states allow pharmacy technicians to register based on their experience in other states in place of state specific requirements.
- Shortages of pharmacy technicians continue.

## Taskforce level of consensus:

- Unanimous.

### References:

- Ohio Pharmacy Technician Reciprocity Guidance - <https://www.pharmacy.ohio.gov/documents/licensing/ptech/apply/general/pharmacy%20technician%20reciprocity%20guidance.pdf>
- Florida Pharmacy Technician Endorsement Application - <https://floridaspharmacy.gov/Applications/MOBILEapp-2HealthHistoryQuestions-DH-5103-MQA-Pharmacy.pdf>
- Michigan Pharmacy Technician Licensing Guide - <https://www.michigan.gov/-/media/Project/Websites/lara/bpl/Pharmacy/Licensing-Info-and-Forms/Info/Pharmacy-Technician-Licensing-Guide.pdf?rev=b74ce6f6221e4a46a24d1c6573dd5ed8>
- <https://www.ashp.org/-/media/assets/pharmacy-technician/docs/Technician-Shortage-Survey-Exec-Summary.pdf>
- <https://ptcb.org/wp-content/uploads/2025/03/The-State-of-the-Pharmacy-Technician-Workforce-White-Paper-by-PTCB.pdf>

# Pharmacy Technician Ratio

## Recommendation:

- Eliminate OR increase the pharmacist to technician ratio to 1:6.

## Background:

- 26 states + Washington D.C. have no ratio for technicians. 4 states have a 1:6 or higher ratio.
- Over the past 5 years, no states have decreased ratios.
- The use of safety technology within the practice of pharmacy has continued to grow and expand.
- National Association of Boards of Pharmacy (NABP) supports the removal of ratios.
- No other medical professions are ratio restricted for care team members or support staff  
Example - no ratio or limits for delegation of clinical medical assistants and nurses.

## Taskforce level of consensus:

- Very strong support.

### References:

- Adams AJ. Extending COVID-19 Pharmacy Technician Duties: Impact on Safety and Pharmacist Jobs. *J Pharm Technol.* 2023;39(3):134-138. doi:10.1177/87551225231172343
- Adams AJ. Pharmacist delegation: An approach to pharmacy technician regulation, *Research in Social and Administrative Pharmacy*, Volume 14, Issue 5, 2018, Page 505, ISSN 1551-7411, <https://doi.org/10.1016/j.sapharm.2018.01.005>
- American Hospital Association. 2026 Environmental Scan. [2026 Environmental Scan | AHA](#)
- Bess DT, Carter J, DeLoach L, White CL. Pharmacy technician-to-pharmacist ratios: a state-driven safety and quality decision. *J Am Pharm Assoc* (2003). 2014 Nov-Dec;54(6):648-51. doi: 10.1331/JAPhA.2014.14032. PMID: 25343210.
- Broughel, James and Yatsyshina, Yuliya, Pharmacy Technician Ratio Requirements (March 2021). Mercatus Research Series, Available at SSRN: <https://ssrn.com/abstract=3809876> or <http://dx.doi.org/10.2139/ssrn.3809876> Research in Social and Administrative Pharmacy 17 (2021) 2015–2018. Applicability of pharmacist to technician ratio laws and regulations on non-resident pharmacies – A multistate legal review
- Doucette WR, Schommer JC. Pharmacy Technicians' Willingness to Perform Emerging Tasks in Community Practice. *Pharmacy (Basel)*. 2018;6(4):113. Published 2018 Oct 12. doi:10.3390/pharmacy6040113
- Hockenberry B, Lavino J. Applicability of pharmacist to technician ratio laws and regulations on non-resident pharmacies - A multistate legal review. *Res Social Adm Pharm.* 2021 Nov;17(11):2015-2018. doi: 10.1016/j.sapharm.2021.03.012. Epub 2021 Mar 27. PMID: 33824087
- National Association of Boards of Pharmacy. Model State Pharmacy Act and Model Rules of the National Boards of Pharmacy. August 2025. [Model Pharmacy Act/Rules](#). Accessed October 2025.
- National Association of Boards of Pharmacy. 2025 Survey of Pharmacy Law - Including all 50 states, DC, Guam and Puerto Rico. 2025.
- WYOMING PHARMACY ACT RULES AND REGULATIONS STATEMENT OF PRINCIPAL REASONS FOR REVISIONS. January 2020. Accessed October 2025. <https://wvleg.gov/arules/2012/rules/ARR20-006.pdf>

# Technician Trainee

## Recommendation:

- Create a new registration classification “Pharmacy Technician Trainee”.
- Technician Trainee:
  - Age 16+
  - High School Graduate/GED or actively enrolled in High School
  - Renewable for 2 years
  - Registration fee less than Technician registration fee
- Technician:
  - Age 18+
  - High School Graduate/GED
  - Has worked 240 hours in pharmacy or meets reciprocity guidelines
  - Meets board certification/training requirements

## Background:

- Currently no one can register as a technician until they are 18 years old which has reduced the pipeline of people entering the pharmacy workforce.

## Taskforce Level of Consensus:

- Unanimous.

### References:

- 1) <https://www.nodakpharmacy.com/apply/tint/>
- 2) <https://dial.iowa.gov/licenses/medical-health-field/pharmacy/pharmacy-technician-trainee-registration>
- 3) <https://www.mass.gov/how-to/apply-for-pharmacy-technician-in-training-license>

# Technician Supervision

## Recommendation:

- Amend 6800.3850 Subp. 5 and 151.102 to allow supervision of a pharmacy technician by a licensed pharmacist outside of a direct, physical work area.

## Background:

- Current:
  - 151.102: pharmacy technician works under the **personal and direct** supervision of the pharmacist
  - 6800.3850 Subp. 5: Pharmacy technicians shall be supervised by a licensed pharmacist **stationed within the same work area** who has the ability to control and is responsible for the action of the pharmacy technician.
- Proposed: Pharmacy technicians shall be supervised by a licensed pharmacist who is responsible for the action of the pharmacy technician.
- Adapts to evolving practice environments across diverse practice settings.
- Maintains accountability while allowing pharmacists to delegate appropriately while ensuring compliance and patient safety.

## Task Force Level of Consensus:

- Unanimous.

### References:

- MN Rule 6800.3850 <https://www.revisor.mn.gov/rules/6800.3850>.
- Minnesota statute 151.102: <https://www.revisor.mn.gov/statutes/cite/151.102>.

# Technician Product Verification

## Recommendation:

- Adopt Technician Product Verification (TPV), also known as tech-check-tech, to allow specially trained and certified pharmacy technicians to conduct final product verification of medications prepared by another technician and to remove existing barriers to allow full implementation in any practice setting.

## Background:

- Aligns with national practice trends.
- Product verification doesn't require clinical judgement and patient safety is not impacted.
- TPV is already implemented within some hospital/institutional settings within the state.
- Many software programs already support split certification.

## Task Force Level of Consensus:

- Very strong support.

### References:

- NABP Survey of Pharmacy Law, page 60-65 [Survey of Pharmacy Law | National Association of Boards of Pharmacy](#)
- Minnesota Board of Pharmacy Guidance Concerning the Use of Medication Bar Code Scanning During Stocking of Automated Drug Distribution Systems in Hospitals. [Tentative Agenda](#)
- Arizona Administrative Code [AZ Board of Pharmacy Statutes & Rules\\_NFR\\_07012025\\_rev10232025.pdf](#)
- Iowa Code 2025, Chapter 155A [Pharmacy Laws & Rules | Department of Inspections, Appeals, & Licensing](#)
- North Dakota Board of Pharmacy Rules, Chapter 61-02-07.1 [North Dakota Board of Pharmacy](#)
- Tennessee Board of Pharmacy Rules, Chapter 1140.02 [1140 - Board of Pharmacy](#)
- Wisconsin Board of Pharmacy Practice, Phar 7.14 [Wisconsin Legislature: Chapter Phar 7](#)
- American Society of Health System Pharmacists (2024) Technician product verification model legislation [Technician Product Verification Model Legislation](#)
- "Tech-check-tech": A review of the evidence on its safety and benefits. <https://doi.org/10.2146/ajhp110022>
- The Optimizing Care Model: Final findings of a novel community pharmacy practice model to enhance patient care delivery using technician product verification. <https://doi.org/10.1016/j.japh.2021.09.006>
- Implementation of a pharmacy technician-driven, technology-assisted final product verification program at a community teaching hospital <https://doi.org/10.1093/ajhp/zxaf013>
- North Dakota Tech-Check-Tech toolkit - [https://www.nodakpharmacy.com/pdfs/TCT\\_Toolkit.pdf](https://www.nodakpharmacy.com/pdfs/TCT_Toolkit.pdf)
- Wisconsin Technician Product Verification toolkit [https://www.nodakpharmacy.com/pdfs/TCT\\_Toolkit.pdf](https://www.nodakpharmacy.com/pdfs/TCT_Toolkit.pdf)

# Prescription Transfers

## Recommendation:

- Pharmacy technicians may accept and provide non-controlled substance prescription transfers with the support of technology.

## Background:

- 41 states + DC allow this without technology.
- RxTransfer, implemented in the NCPDP SCRIPT Standard version 2023011, enables the secure and electronic transmission of prescription transfer data between pharmacies without the requirement of a shared real time database.
- MN Rule 6800.3120 requires that transfers are communicated directly between pharmacists.
- Amending this rule would provide alignment with federal regulations allowing electronic transfers and make prescription transfers non-clinical tasks that can be fulfilled by technicians.

## Task Force Level of Consensus:

- Strong support.

### References:

- <https://www.ncpdp.org/NCPDP/media/pdf/SCRIPT-Implementation-Recommendations.pdf>
- [https://www.ncpa.co/pdf/2024/surescripts\\_epcs\\_rxtransfer\\_bulletin\\_feb2024.pdf](https://www.ncpa.co/pdf/2024/surescripts_epcs_rxtransfer_bulletin_feb2024.pdf)
- <https://www.ncbi.nlm.nih.gov/books/NBK519065/>
- <https://codes.ohio.gov/ohio-administrative-code/rule-4729:3-3-04>
- <https://www.legislature.mi.gov/Laws/MCL?objectName=MCL-333-17739>
- <https://publications.tnsosfiles.com/rules/1140/1140-03.20240314.pdf>
- <https://www.legis.iowa.gov/docs/iac/agency/07-15-2020.657.pdf>

## Recommendation:

- Allow pharmacists to delegate to technicians the ability to take new prescriptions.

## Background:

- 22 states allow without evidence of increased patient safety risk.
- Hold times for new verbal orders can be significant.
- Pharmacists delegate and maintain oversight and accountability.

## Task Force Level of Consensus:

- Moderate support.

### References:

- Frost, T. P., & Adams, A. J. (2017). Expanded pharmacy technician roles: Accepting verbal prescriptions and communicating prescription transfers. *Research in Social and Administrative Pharmacy*, 13(6), 1)191–1195. <https://doi.org/10.1016/j.sapharm.2016.11.010>
- 6800.6200 - MN Rules Part. (2025). Mn.gov. <https://www.revisor.mn.gov/rules/6800.6200/>
- [https://docs.legis.wisconsin.gov/code/admin\\_code/phar/7.pdf](https://docs.legis.wisconsin.gov/code/admin_code/phar/7.pdf)
- <https://www.nacds.org/pdfs/pharmacy/2020/Pharmacy-Technician-Expansion-Position-Paper.pdf>

# Registration – CE Date Alignment

## Recommendation:

- Align pharmacy technician CE reporting with the annual registration renewal date.

## Background:

- Pharmacy technicians currently navigate two separate deadlines for registration renewal and CE reporting.
- Many states have successfully aligned CE with renewal, demonstrating a more efficient regulatory model.

## Task Force Level of Consensus:

- Very strong support.

### References

- 6800.3850 Pharmacy Technicians [Subp. 1b. Registration, renewals.](#)
- 2) 6800.3850 Pharmacy Technicians [Subp. 2a. Minimum hours required for technicians; reporting.](#)
- 3) TITLE 68: PROFESSIONS AND OCCUPATIONS CHAPTER VII: DEPARTMENT OF FINANCIAL AND PROFESSIONAL REGULATION SUBCHAPTER b: PROFESSIONS AND OCCUPATIONS PART 1330 PHARMACY PRACTICE ACT [SECTION 1330.230 CONTINUING EDUCATION \("CE"\) FOR CERTIFIED PHARMACY TECHNICIANS](#)
- RxCE Pharmacist & Pharmacy Tech CE Requirements by State <https://rxce.com/Articles/Pharmacist-and-Pharmacy-Tech-CE-Requirements-by-State%20%7C%20Part-1-Article#:~:text=Pharmacy%20technicians%20registered%20in%20Iowa,hour%20of%20patient%20safety%20coursework>
- Kansas Board of Pharmacy License Renewal <https://www.pharmacy.ks.gov/licensing-registration/license-renewal>
- N.D. Admin Code 61-02-07.1-10 - Pharmacy technician continuing education <https://www.nodakpharmacy.com/pdfs/contEdRules.pdf>
- Wis. Stat. § 440.08(2)(a)56m <https://dsps.wi.gov/Pages/Professions/PharmacyTech/Default.aspx>

# Standard of Care Regulatory Model

## Recommendation:

- The Minnesota Board of Pharmacy should work towards a Standard of Care (SOC) Regulatory Model.

## Background:

- SOC means the degree of care a prudent and reasonable licensee or registrant with similar education, training, and experience would exercise under similar circumstances (NABP Model Act, 2025).
- SOC aligns pharmacy with other health professions, such as medicine and nursing. SOC enables pharmacists and technicians to practice based on their education, training, experience and practice setting and adapt to evolving clinical guidelines without requiring constant statutory revisions.
- Evidence demonstrates multiple states have safely implemented this model.
- SOC improves patient access and outcomes by removing barriers, enabling pharmacy teams to deliver timely and evidence based care.

## Taskforce level of consensus:

- Unanimous.

### References:

- Adams, A. J. (2019). Transitioning pharmacy to "standard of care" regulation: Analyzing how pharmacy regulates relative to medicine and nursing. *Research in Social and Administrative Pharmacy*. <https://www.sciencedirect.com/science/article/abs/pii/S155174111830562X>.
- Adams, A. J., Chopski, N. L., & Adams, J. L. (2024). How to implement a standard of care regulatory model for pharmacists. *Journal of the American Pharmacists Association*. <https://doi.org/10.1016/j.japh.2024.02.007>.
- Adams, A. J., Frost, T. P., & Weaver, K. K. (2021). Pharmacy regulatory innovation index: Benchmarking the regulatory environment in 10 western states. *Journal of the American Pharmacists Association*. <https://www.sciencedirect.com/science/article/abs/pii/S1544319121001850>.
- Adams, A. J., Weaver, K. K. (2019). Pharmacists' patient care process: A state "scope of practice" perspective. *Innovations in Pharmacy*, 10(2). <https://pubs.lib.umn.edu/index.php/innovations/article/view/1389/1485>.
- Adams, A. J., Weaver, K. K., & Adams, J. L. (2023). Revisiting the continuum of pharmacist prescriptive authority. *Journal of the American Pharmacists Association*, 63, 1508–1514. <https://doi.org/10.1016/j.japh.2023.08.015>.
- Adams, J. L., O'Connor, S., Seignemartin, B., Shipman, A. J., McConnell, W., Dudman, A., Akers, J., & Vernon, V. (2023). Battling professional self-sabotage: Embracing standard of care as the future of pharmacy regulation. *Journal of the American Pharmacists Association*. <https://doi.org/10.1016/j.japh.2023.08.015>.
- Burns, A. (2018). What is the pharmacists' patient care process and why is it important? *Pharmacy Today*. [https://www.pharmacytoday.org/article/S1042-0991\(18\)30492-4/fulltext](https://www.pharmacytoday.org/article/S1042-0991(18)30492-4/fulltext).
- Carmichael, J. M., et al. (1997). Collaborative drug therapy management by pharmacists. *Pharmacotherapy*, 17(5), 1050–1061. Cornell Law School Legal Information Institute. (n.d.). Bright-line rule. [https://www.law.cornell.edu/wex/bright-line\\_rule](https://www.law.cornell.edu/wex/bright-line_rule).
- Frost, T. P. (2025). Toward pharmacist full practice authority. Cicero Institute Keynote. Minnesota Pharmacy Association (MPHA). (2025). Call for resolutions: Standards of care regulatory model.
- Morgan, B. (n.d.). Standard of care fundamentals: State perspectives and updates. National Alliance of State Pharmacy Associations (NASPA). National Association of Boards of Pharmacy. (2024). Model Act.
- Shakya, S., Plemmons, A., Bae, K., & Timmons, E. (2022). The pharmacist will see you now: Pharmacist prescriptive authority and access to care in Idaho. SSRN. <https://ssrn.com/abstract=4294905> or <http://dx.doi.org/10.2139/ssrn.4294905>

**THANK YOU!**