Curriculum Vitae: February 2021

Personal Information	Name: Address: Phone:	Dirk Krueger Department of Economics, University of Pennsylvania, The Ronald O. Perelman Center for Political Science and Economics, 133 South 36 th Street, Philadelphia, PA 19104 (215) 573-1424 Fax: (215) 573 2057
	Email, www:	dkrueger@upenn.edu, https://web.sas.upenn.edu/dkrueger
Education	MA, Ph. D. Economics, University of Minnesota, 1999 Diplom in Economics, University of Bielefeld (Germany), 1995	
Current Positions	 University of Pennsylvania, Philadelphia, PA Walter H. and Leonore C. Annenberg Professor in the Social Sciences Professor of Economics, Secondary Appointment in Finance at Whart International Economic Review Editor: January 2020 to present 	
	The Econom Elected Fellow	etric Society w (elected 2020)
Other Affiliations		reau of Economic Research, Cambridge, MA ociate, 2009 to present, Faculty Research Fellow, 2002-09
	Centre for Economic Policy Research, London, UK Research Fellow 2009 to present, Research Affiliate, 2004-09	
		ow, 2008 to present
		gang Goethe University, Frankfurt, Germany ow, CFS, 2004 to present
Past Positions		gang Goethe University, Frankfurt, Germany (C4), Chair for Macroeconomics, 2004 to 2006
	•	Pennsylvania, Philadelphia, PA sociate, Full Professor, 2003-2004, 2007-2008, 2008-2018
		versity, Stanford, CA Fessor of Economics: 1999-2003, Hoover Fellow, 2002-03
	Co-Editor, Ja	itions: Co-Editor, <i>American Economic Review</i> (2009-12), <i>purnal of the European Economic Association</i> (2015-17) itor, <i>Review of Economic Studies</i> (2018-19)

Working Papers

- Optimal Taxes on Capital in the OLG Model with Idiosyncratic Income Risk (with Alex Ludwig), *NBER WP 24335, CEPR DP 12717*, Revise and Resubmit, *Journal of Public Economics*
- The Long-Term Distributional and Welfare Effects of Covid-19 School Closures (with Nicola Fuchs-Schuendeln, Alexander Ludwig and Irina Popova), *NBER WP* 27773, *CEPR DP 15227*
- Coalition-Proof Risk Sharing under Frictions (with Hal Cole, George Mailath and Yena Park), *NBER WP* 26667, *CEPR DP* 14333
- Neoclassical Growth with Long-Term One-Sided Commitment Contracts (with Harald Uhlig)
- How does Household Consumption Respond to Income Shocks? (with F. Perri)

Publications

Accepted	High Marginal Tax Rates on the Top 1%? Lessons from a Life Cycle Model with Idiosyncratic Income Risk (with Fabian Kindermann), forthcoming, <i>American Economic Journal: Macroeconomics</i>
2021	Consumption Insurance Against Wage Risk: Family Labor Supply and Optimal Progressive Income Taxation (with Chunzan Wu), <i>American Economic Journal: Macroeconomics</i> , Vol. 13, 79-113.
2020	Intergenerational Redistribution in the Great Recession (with A. Glover, J. Heathcote and V. Rios-Rull), <i>Journal of Political Economy</i> , Vol 128, 3730-3778.
	The Welfare Cost of Consumption Fluctuations in the Presence of Memorable Goods (with Rong Hai and Andy Postlewaite), <i>Quantitative Economics</i> , Vol 11, 1177-1214.
	Should Germany Have Built a New Wall? Macroeconomic Lessons from the 2015-18 Refugee Wave (with Chris Busch, Zainab Iftikhar, Alexander Ludwig and Irina Popova), <i>Journal of Monetary Economics</i> , Vol 113, 28-55.
	Health versus Wealth: On the Distributional Effects of Controlling a Pandemic (with Andy Glover, Jon Heathcote and Victor Rios-Rull), NBER WP 27046, CEPR DP 14606, <i>CEPR Covid Economics: Vetted and Real-Time Papers</i> , Vol 6, 21-55.
	Macroeconomic Dynamics and Reallocation in an Epidemic (with Harald Uhlig and Taojun Xie), NBER WP 27047, CEPR DP 14607 CEPR Covid Economics: Vetted and Real-Time Papers, Vol 5, 22-64, R&R Economic Policy.

2019	How Does Tax Progressivity and Household Heterogeneity Affect Laffer Curves? (with Hans Holter and Sergey Stepanchuk), <i>Quantitative Economics</i> , Vol. 10, 1317–1356.
	Analyzing the Effects of Insuring Health Risks: On the Trade-off between Short Run Insurance Benefits vs. Long Run Incentive Costs (with H. Cole and S. Kim), <i>Review of Economic Studies</i> , Vol. 86, 1123-1169.
2017	On the Distribution of the Welfare Losses of Large Recessions (joint with Kurt Mitman and Fabrizio Perri) <i>Advances in Economics and</i> <i>Econometrics: Theory and Applications (Eleventh World Congress)</i>
2016	Macroeconomics and Household Heterogeneity (joint with Kurt Mitman and Fabrizio Perri), <i>Handbook of Macroeconomics</i> , Vol 2B, chapter 11
	On the Optimal Provision of Social Insurance: Progressive Taxation versus Education Subsidies in General Equilibrium (with Alexander Ludwig), <i>Journal of Monetary Economics</i> , Vol. 77, 72–98.
2013	Housing, Mortgage Bailout Guarantees and the Macro Economy (with K. Jeske and Kurt Mitman), <i>Journal of Monetary Economics</i> , 60, 917-935.
	A Dynamic Model of Housing Demand: Estimation and Policy Implications (with P. Bajari, P. Chan and D. Miller), <i>International Economic Review</i> , Vol. 54, 409-442.
	Optimal Progressive Labor Income Taxation and Education Subsidies When Education Decisions and Intergenerational Transfers are Endogenous (with A. Ludwig), <i>American Economic Review P&P</i> , Vol. 103, 496-501.
2011	Consumption and Saving over the Life Cycle: How Important are Consumer Durables? (with J. Fernandez-Villaverde), <i>Macroeconomic Dynamics</i> , Vol. 15, 725-770.
	Public versus Private Risk Sharing (with Fabrizio Perri), <i>Journal of Economic Theory</i> , Vol. 146, 920–956
	Solving the Multi-Country Real Business Cycle Model using a Smolyak-Collocation Method (with Ben Malin and Felix Kubler), <i>Journal of Economic Dynamics and Control</i> , Vol 35, 229-239.
2010	When is Market Incompleteness Irrelevant for the Price of Aggregate Risk (and when it is not)?" (with Hanno Lustig), <i>Journal of Economic Theory</i> , Vol. 145, 1-41.

	Cross-Sectional Facts for Macroeconomists (with F. Perri, L. Pistaferri and G. Violante), <i>Review of Economic Dynamics</i> , Vol 13 (1), 1-14.
	Inequality Trends for Germany: A Tale of Two Countries (with N. Fuchs-Schuendeln and M. Sommer), <i>Review of Economic Dynamics</i> , Vol 13 (1), 103-132
2009	Taxing Capital: Not a Bad Idea after All! (with J.C. Conesa and S. Kitao), <i>American Economic Review</i> , Vol 99(1), 25-48.
	"Demographic Change, Relative Factor Prices, International Capital Flows, and Their Differential Effects on the Welfare of Generations" (with A. Ludwig and A. Börsch-Supan), in <i>Social Security Policy in a Changing</i> <i>Environment</i> , NBER Volume edited by J. Brown, J. Liebman and D. Wise
2008	Evaluating Asset Pricing Models with Limited Commitment using Micro Consumption Data (with H. Lustig and F. Perri), <i>Journal of the European Economic Association Papers and Proceedings</i> , 2008, Vol 6, (2-3), 715–726.
	"Child Labor: A Survey for the Theoretically Inclined" (with Matthias Doepke), in <i>Frontiers in Family Economics</i> , edited by Peter Rupert.
	"Markov Equilibria in Macroeconomics" (with Felix Kubler), <i>The New Palgrave Dictionary of Economics</i> , 2 nd edition.
2007	"Consumption over the Life Cycle: Facts from CEX Data" (with J. Fernandez - Villaverde), <i>Review of Economics and Statistics</i> , Vol. 89(3), 552-565.
	"On the Consequences of Demographic Change for Rates of Returns to Capital, and the Distribution of Wealth and Welfare" (with A. Ludwig), <i>Journal of Monetary Economics</i> , Vol. 54(1), 49-87.
2006	"On the Optimal Progressivity of the Income Tax" (with J. C. Conesa), <i>Journal of Monetary Economics</i> , 2006, Vol. 53(7), 1425-1450.
	"Competitive Risk Sharing Contracts with One-Sided Commitment" (with H. Uhlig), <i>Journal of Monetary Economics</i> , 2006, Vol. 53(7), 1661-91.
	"Pareto Improving Social Security Reform when Financial Markets are Incomplete!?" (with F. Kubler), <i>American Economic Review</i> , 2006, Vol. 96(3), 737-755.
	"Does Income Inequality Lead to Consumption Inequality? Evidence and Theory" (with F. Perri), <i>Review of Economic Studies</i> , 2006, Vol. 73(1), 163-93.

	"Public Insurance against Idiosyncratic and Aggregate Risk: The Case of Social Security and Progressive Income Taxation," <i>CESifo Economic Studies</i> , Vol. 52(4), 587-620.
2005	"Understanding Consumption Smoothing: Evidence from the US Consumer Expenditure Survey" (with F. Perri), <i>Journal of the European Economic</i> <i>Association Papers and Proceedings</i> , 2005, Vol 3, (2-3), 340-349.
	"On the Distributional Consequences of Child Labor Legislation" (with J. Donohue), <i>International Economic Review</i> , 2005, Vol. 46(3), 785-815.
	"On the Welfare Consequences of the Increase in Inequality in the US" (with Fabrizio Perri), 18 th NBER Macroannual, 2004, 83-121.
	"Risk Sharing across Households, Generations and Countries: The Research Agenda of Dirk Krueger and Fabrizio Perri", SED Newsletter.
2004	"Skill-Specific rather than General Education: A Reason for US-Europe Growth Differences" (with K. Kumar), <i>Journal of Economic Growth</i> , 2004, Vol. 9(2), 167-207.
	"US-Europe Differences in Technology-Driven Growth: Quantifying the Role of Education" (with K. Kumar), <i>Journal of Monetary Economics</i> , 2004, Vol. 51(1), 161-190.
	"Computing Equilibrium in OLG Models with Stochastic Production" (with F. Kubler), <i>Journal of Economic Dynamics and Control</i> , Vol. 28(7), 1411-1436.
	"US-Europe Growth Differences: The Role of Education" (with Krishna Kumar), in: <i>Growth and Stability in the EU: Perspectives from the Lisbon Agenda,</i> Conference Volume, Austrian National Bank, 36-49
	"The Effects of Demographic Changes on Aggregate Savings: Some Implications from the Life Cycle Model", in: <i>Capital Markets In the Long</i> <i>Term: Demography, Economic Development and Funded Pension</i> <i>Systems</i> , Center for Financial Studies Conference Volume, 71-82.
2002	"Intergenerational Risk Sharing via Social Security when Financial Markets are Incomplete" (with Felix Kubler), <i>American Economic Review Papers and Proceedings</i> , 2002, Vol. 92(2), 407-410.
1999	"Social Security Reform with Heterogeneous Agents" (with J. C. Conesa), <i>Review of Economic Dynamics</i> , 1999, Vol. 2(4), 757-795.

Research in Progress

- On the Redistributive Effects of Government Bailouts in the Mortgage Market (with Kurt Mitman and Richard Foltyn)
- Health, Longevity and Economic Growth (with Alexander Ludwig, Matthias Schoen and Jesus Fernandez-Villaverde)
- Optimal Capital and Progressive Labor Income Taxation with Early Human Capital Investments, Endogenous College Decisions and Intergenerational Transfers (with Fabian Becker and Alex Ludwig)
- Fragile Coalitions and Bank Runs (with Hal Cole, George Mailath and Yena Park)
- On the Evolution of Health Inequality (with Hal Cole and Soojin Kim)
- Secular Stagnation? (with Victor Rios Rull)

Research Honors, Awards and Lectures

- Fellow of the Econometric Society (elected 2020)
- Keynote Speaker, 2020 Theoretical and Experimental Macroeconomics, Berlin (postponed)
- Keynote Speaker, 2020 Tsinghua Workshop in Macroeconomics, Beijing (postponed)
- Clark Lecture 2019, Queen's University
- Keynote Speaker, 2019 Shanghai Macroeconomics Workshop
- Keynote Speaker, 2018 GRIPS-UT Macroeconomics and Policy Workshop
- Keynote Speaker, 2018 Canadian Macro Study Group
- Keynote Speaker, 2018 Netspar Annual Conference
- Keynote Speaker, 2017 Midwest Macro Conference in Pittsburgh
- Keynote Speaker, 2017 North American Meeting of the Econom. Soc. St. Louis
- Keynote Speaker, 2016 QSPS Workshop at Utah State
- Invited Lecture, 11th World Congress of the Econometric Society, Montreal 2015
- Minnesota Lecture, November 2014
- Keynote Speaker: CesIfo Macroeconomics and Survey Data Conference in Munich, December 2013
- Distinguished Research Visitor, Georgetown University 2012-13
- Invited Speaker, European Meeting of the Econometric Society, Oslo 2011
- Keynote Speaker: Workshop on Macroeconomic Dynamics, Brisbane 2011
- Keynote Speaker: 32nd Encontro Brasileiro de Econometria, 2010
- Keynote Speaker: Netspar Pension Workshop, January 2009
- Honorary Lecture, CESifo Public Economics Conference 2006
- Speaker, Review of Economic Studies European Tour 1999
- Alfred P. Sloan Dissertation Fellowship, 1999
- Graduate School Fellowship, University of Minnesota, 1995
- German Academic Exchange Service Fellowship, 1993 1994
- Friedrich Ebert Stiftung Fellowship, 1991 1995

Research Grants

- Stanford Institute for Economic Policy Research Junior Faculty Research Grant, 1999 2000
- NSF Grant "Social Security & The Wealth Distribution with Overlapping Generations & Aggregate Uncertainty," (with F. Kubler), 2001-04
- NSF Grant "Dynamic General Equilibrium Models of Community Formation: Theory and Empirical Analysis," (with P. Bajari) 2004-07
- NSF Grant "How does Household Consumption Respond to Income Shocks? Evidence, Theory and Implications," (with F. Perri) 2008-11.
- NSF Grant SES 1123547 "The Intergenerational Redistribution of Wealth and Welfare in Great Recessions," 2011-14.
- NSF Grant SES 1326781 "Health Risks, Health Technology and Public Policy" (with Jesus Fernandez-Villaverde and Hal Cole), 2013-2018
- NSF Grant SES 1757084 "Neoclassical Growth with Long-Term One-Sided Commitment Contracts " (with Harald Uhlig), 2018-2021

Teaching Teaching Manuscripts

- Macroeconomic Theory (300 pages)
- Consumption and Saving: Theory and Evidence (150 pages)
- Intermediate Macroeconomics (400 pages)
- Macroeconomics II (100 pages)
- Dynamic Fiscal Policy (150 pages)
- Quantitative Macroeconomics (111 pages)

Courses Taught at Goethe University Frankfurt

- Dynamic Fiscal Policy, Lecture and Seminar, Winter 2004, 2005
- Intermediate Macroeconomics (Macro II), Summer 2005, 2006
- Quantitative Macroeconomics, Summer 2005
- Graduate Macroeconomic Theory, Summer 2005, 2006
- 2nd Year Graduate Course on Consumption and Saving: Theory and Evidence, Winter 2005

Courses Taught at Stanford University

- Graduate Macroeconomic Theory, Winter 2000, Fall 2001, 2002
- 2nd Year Graduate Course on Consumption and Saving: Theory and Evidence (with Luigi Pistaferri), Winter 2001
- Intermediate Macroeconomics, Fall 1999, Winter 2001

Courses Taught at the University of Pennsylvania

- Intermediate Macroeconomics, Fall 2001, 2015, 2017-2020
- Topics in Macroeconomics (Dynamic Fiscal Policy), Spring 2004, Spring 2007, Spring 2008, Spring 2014
- 1st Year Graduate Macroeconomic Theory, Spring 2008-2015, 2017-2020
- 2nd Year Graduate Course on Consumption and Saving: Theory and Evidence, Fall 2001, Spring 2004, 2007-2009, 2011-19

Summer Courses on Dynamic Macroeconomics, Macro with Heterogeneous Households, Computational Methods (Mannheim, Frankfurt, Bonn, Bank of Canada, Berlin, Vienna, Oslo, Konstanz)

Teaching Honors

Distinguished Instructor, University of Minnesota 1996 – 1997 Annual Economics Outstanding Teaching and Advising Prize 1999-2000, Stanford University, Department of Economics Best Ph.D. class Evaluation, Ph.D. program, University of Frankfurt, 2004-2005. Best Undergraduate course evaluation, Academic Years 2004-2005 & 2005-2006, University of Frankfurt Goethe University Frankfurt, Teaching Prize, 2006 Kravis Undergraduate Teaching Award, UPenn, 2008

Students Advised (Main Advisor)

- Philip Jung (Dr. rer pol, Frankfurt, 2006, University of Amsterdam)
- Maxim Ulrich (Dr. rer pol, Frankfurt, 2008, Columbia Business School)
- Kei Muraki (Ph. D. Upenn 2009, Japanese Government)
- Matt Hoelle (Ph. D. Upenn 2010, Max Weber Fellowship, EUI)
- Serdar Ozkan (Ph. D. Upenn 2011, Board of Governors)
- Alvaro Aguirre (Ph. D. Upenn 2011, Central Bank of Chile)
- Sergey Stepanchuk (Ph. D. Upenn 2011, Central Bank of Hungary)
- Hans Holter (Ph. D. Upenn 2011, University of Uppsala)
- Fatih Karahan (Ph. D. Upenn 2012, New York FED)
- Aaron Hedlund (Ph. D. Upenn 2012, Baylor)
- Grey Gordon (Ph. D. Upenn 2012, Indiana)
- Soojin Kim (Ph. D. Upenn 2013, Purdue)
- Zhao Yang (Ph. D. Upenn 2013, Cornerstone)
- Kurt Mitman (Ph. D. Upenn 2014, IIES Stockholm)
- Yena Park (Ph. D. Upenn 2014, Rochester)
- Serena Rhee (Ph. D. Upenn 2014, Hawaii)
- Candice Tian (Ph. D. Upenn 2014, Shufe)
- Chunzan Wu (Ph. D. Upenn 2016, Miami)
- Gustavo Camilo (Ph. D. Upenn 2016, Cornerstone)
- Daniel Wills (Ph. D. Upenn 2017, Universidad Los Andes)
- David Zarruk Valencia (Ph. D. Upenn 2018, ITAM)
- Gloria Allione (Ph. D. Upenn 2019, Bank of Italy)
- Andre Victor Luduvice (Ph.D. Upenn, 2020 expected)
- Omer Koru (Ph.D. Upenn, 2021 expected)
- Desen Lin (Ph.D. Upenn, 2021 expected)
- Seung-Ryong Shin (Ph.D. Upenn, 2021 expected)
- Hanbaek Lee (Ph.D. Upenn, 2021 expected)
- Coby Wittman (Ph.D. Upenn, 2021 expected)

Students Advised (Dissertation Committee)

- Hanno Lustig (Ph. D. Stanford, 2002, University of Chicago)
- Stijn van Nieuwerburgh (Ph. D. Stanford, 2003, Stern, NYU)
- Yongseok Shin (Ph. D. Stanford, 2004, University of Wisconsin)
- Boragan Aruoba (Ph.D. UPenn, 2004, University of Maryland)
- Sanjay Chugh (Ph. D. UPenn, 2004, Board of Governors)
- Vivian Yue (Ph. D. UPenn, 2005, NYU)
- Marianne Saam (Ph.D. Goethe University, 2006, ZEW)
- Keith Kuester (Ph. D. Goethe University, 2006, ECB)
- Christian Habermann (Ph.D. University of Würzburg, 2007)
- Javier Gonzales (Ph. D. UPenn, 2008, Mexican Government)
- Alexander Bick (Ph.D. Goethe University, 2009. Arizona State)
- Clement Joubert (Ph. D. UPenn, 2010, UNC)
- Leonardo Melosi (Ph. D. UPenn, 2010, LBS)
- Jonathan Pogach (Ph. D. UPenn, 2010, FDIC)
- Sergiy Stensenko (Ph. D. UPenn, 2010, Moody's)
- Omer Parmaksiz (Ph. D. UPenn, 2010)
- Myat Mon (Ph. D. UPenn, 2011. USC)
- Cezar Santos (Ph. D. Upenn 2012, Mannheim)
- Hongseok Choi (Ph. D. Upenn 2012, Military Academy in Korea)
- Hikaru Saijo (Ph. D. Upenn 2013, UC Santa Cruz)
- David Weiss (Ph. D. Upenn 2013, Tel Aviv)
- Etienne Lale (Ph. D. Sciences Po 2013, Bristol)
- Luigi Bocola (Ph. D. Upenn 2014, Northwestern)
- Nils Goernemann (Ph. D. Upenn 2014, Board of Governors)
- Douglas Hanley (Ph. D. Upenn 2014, Pittsburgh)
- Felipe Saffie (Ph. D. Upenn 2014, Maryland)
- Eun-Young Shim (Ph. D. Upenn 2014, USC)
- Tzuo Law (Ph. D. Upenn 2015, Boston College)
- Fan Wang (Ph. D. Upenn 2015, University of Houston)
- Daniel Neuhann (Ph. D. Upenn 2016, University of Texas Finance)
- Vesa Soini (Ph. D. Upenn 2017, Universitetet i Stavanger)
- Kory Katenga (Ph. D. Upenn 2018, EUI PostDoc)
- Zhesheng Qiu (Ph. D. Upenn 2018, City University of Hong)
- Raphael Galvao (Ph. D. Upenn 2018, Universidad Alberto Hurtado)
- Minsu Chang (Ph. D. Upenn 2019, Georgetown University)
- Le Xu (Ph.D. Upenn, 2020, Shanghai Jiaotong University)
- Paolo Martellini (Ph.D. Upenn, 2020, University of Wisconsin)
- Harun Alp (Ph.D. Upenn, 2020, Federal Reserve Board)
- Sergio Villalvazo (Ph.D. Upenn, 2021, expected)
- Jinfeng Luo (Ph.D. Upenn, 2021, expected)
- Marc Folch (Ph.D. Upenn, 2021, expected)
- Kris Shaw (Ph.D. Upenn, 2021, expected)

Dissertation Discussant/External Examiner

- Conny Olovsson (Ph.D. University of Stockholm, 2004)
- Pawel Doligalski (Ph.D. European University Institute, 2016)
- Vinzenz Ziesemer (Ph.D. European University Institute, 2018)
- Asier Aguilera (Ph.D. University of Navarra, 2019)
- Ivo Bakota (Ph.D. CERGE, Charles University Prague, 2020)

Service **International Economic Editor** Lead Editor, January 2020 – present, Associate Editor: July 2006-08, 2014-17 **Review of Economic Studies** Managing Editor, January 2018 - 2019 Journal of the European Economic Association Co-Editor: January 2015 – 2017 **American Economic Review** Co-Editor: January 2009 – 2012, Board of Editors: April 2006 – 2008 **B.E.** Journals in Macroeconomics Coordinating Editor: January 2005 - 2006, Editor: October 2004 - 2006 **Review of Economic Studies** Editorial Board: October 2005 - 2007 **Review of Economic Dynamics** Associate Editor: 2006, Editor: 2007 – 2008 Guest Editor, January 2010 Volume on Cross-Country Inequality Facts **Theoretical Economics** Associate Editor, January 2007 – 2008

> **Referee for** AER, AEJ: Macroeconomics, Canadian Journal of Economics, Canadian Research Council, DFG, Econometrica, Economic Journal, ET, European ERC Grants, EER, IER, ITAX, JET, JEDC, JEEA, JME, JMCB, JPE, JPubE, MD, National Science Foundation, Oxford Economic Papers, QJE, RED, REStat, Review of Economic Studies, SJE, Swiss National Science Foundation.

University of Pennsylvania:

Department Chair, 2014-2016 Director of Graduate Studies, Economics 2008-2012 Chair, Department of Economics Personnel Committee, 2018-2019 Various Hiring and Ad Hoc Committees SAS Personnel Committee 2012-13, SAS Planning & Priorities Comm. 2013-15

Short Term Visits Atlanta, Chicago, Minneapolis, Richmond, Philadelphia FED's, ECB: Visiting Scholar, various years Princeton University Sabbatical, Academic Year 2016/2017

Memberships in Organizations: American Economic Association, Econometric Society, European Economic Association, Society for Economic Dynamics, Verein für Socialpolitik (also: Member, Makroökonomischer Ausschuss)