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FDI regulation and firm productivity: Evidence from Indonesia
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Regulatory experiments for the reflexive
and adaptive governance of innovation
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Physiological Aging Around the World
Holger Strulik

Die europäische Fiskalunion —
Solidargemeinschaft oder Transferunion?
Ein Veranstaltungsbericht von Helene Schüle

Impressum

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Like many other developing and emerging countries at the end of the 20th century, Indonesia has liberalized its markets substantially, thereby both lowering tariffs and fostering foreign direct investment (FDI). The implementation of a protectionist policy reform (the so-called *negative investment list*) counteracted these liberalizing trends by limiting FDI flows on product- and firm-level. While the positive link between foreign participation and firm productivity has been widely documented in the literature, the direct effects of FDI regulation on firm outcomes have been less extensively explored.

We address this research gap by analyzing the effect of a substantial increase in foreign ownership restrictions on the productivity of Indonesian manufacturing firms (Genthner and Kis-Katos 2019).¹ For our empirical analysis, we exploit changes in three revisions of the *negative investment list*. Our findings show that firms, which face binding FDI restrictions, experience declining FDI stocks and become less productive.

Empirical analysis

The study builds upon a firm panel from 2000 to 2015, which allows us to link regulatory reform to the affected firms. Since regulation is not only specific to products, but also to firm characteristics, we are further able to distinguish between direct effects of binding regulation or indirect (spillover) effects from regulation of a particular product. Our empirical strategy starts with a systematic investigation of potential drivers of FDI regulation. Anecdotal evidence shows that the Indonesian government explained its regulatory reforms with national interest to protect industries from international competition and M&A activity. The study therefore first looks into the political economy of the reforms. It finds that sectoral exposure to the presence of state-owned firms or recent privatization are the strongest predictors of subsequent increases of regulation.

Our main analysis then contrasts firms exposed to binding (firm-specific) FDI regulation to firms in the same industry, which operate in regulated product markets but have not been subject to direct restrictions and are only affected due to regulatory spillovers. A set of fixed effects, as well as time-variant firm and tariff controls help us to come closer towards a causal identification. To account for the endogenous political economy of the regulatory reform, we also flexibly allow for trends in several initial product characteristics suggested by both theory and our systematic testing procedure. Besides the main outcomes (foreign capital share and TFP), the paper also investigates changes in capital composition within firms as most relevant adjustment mechanism.

Results and main takeaway

The results in Figure 1 document a robust negative relationship between binding regulation and firm productivity. Cumulative time effects of binding regulation and spillovers on TFP show no significant pre-trends in the three years prior to implementation. Beginning in the year the regulation is implemented, productivity tends to move upward in regulated product markets without reaching consistent significance (blue line). At the same time, directly affected firms experience a marked differential productivity decline (black line), and the cumulative differential effect of binding regulation over time becomes significantly negative one year after the regulatory change.

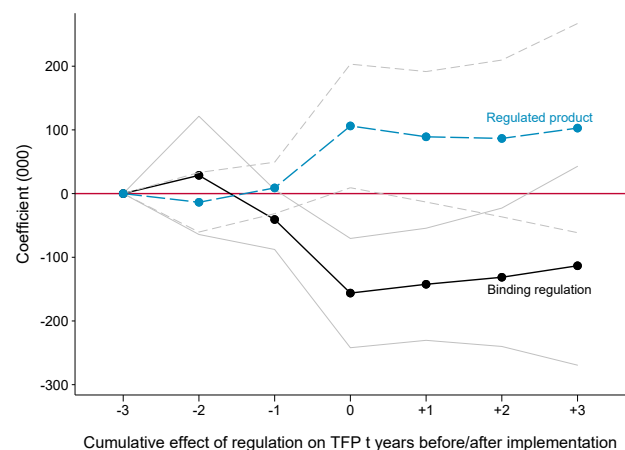


Figure 1 — Cumulative effects of leading and lagged regulation on total factor productivity, 90% confidence bands

While the *negative investment list* also accomplishes its goal to reduce foreign capital shares within directly affected firms, this does not result in an overall shortage of capital within those firms. Our analysis of the underlying mechanisms shows that reductions in foreign capital are fully compensated by increases in domestic capital. From a policy perspective, this suggests that the *negative investment list* has been successful in channeling more domestic private capital towards regulated firms, thereby meeting its political economy goals. Protecting local industries, however, entails economic costs. Firms experience productivity declines in the aftermath of binding regulation, which points towards either less efficient allocation or a lower technological content of domestic capital. Along these lines, policymakers face a trade-off between short-run (political) benefits of protectionism and long-run consequences of shrinking productivity.

¹Genthner, R. and Kis-Katos, K. (2019). Foreign investment regulation and firm productivity: Granular evidence from Indonesia. CEGE Discussion Paper No. 345, University of Göttingen, Göttingen.

The Reragi project

Societal transitions are long-term and complex processes and their outcomes are highly uncertain in the field of sustainable development. Regulatory experiments help to guide transitions by providing insights into the dynamics of social processes. They allow testing new policies and regulations and facilitate learning processes about their effects.

Thus, the research project Reragi (Regulatory experiments for the reflexive and adaptive governance of innovation) analyzes regulatory experiments as an instrument to govern innovation and to generate learning processes. Reragi is a joint project of the University of Göttingen, the Institute for Small Business Economics at the University of Göttingen, the Darmstadt University of Applied Sciences and the Oeko-Institute and is funded for two years by the Federal Ministry of Education and Research (BMBF).

The project started in January 2019 with a literature review on regulatory experimentation (Bauknecht et al. 2020). The literature review served as a starting point for an empirical analysis of 26 international cases of regulatory experiments targeting sustainable development (according to the UN SDGs). The analysis relied on publicly available documents of the respective cases. The cases include exceptions from the existing regulatory framework such as the regulatory sandbox in the electricity and gas sector in the UK as well as experiments testing new regulatory options like the basic income experiment in Finland.

Empirical analysis of 26 international cases

The results of this analysis are summarized in the publication of Bischoff et al. 2020. The authors used a qualitative content analysis (Mayring 2010) to examine the text material. The institutional analysis of Bizer and Führ (2015) as well as a comprehensive framework for analyzing regulatory experiments (derived in the literature review of Bauknecht et al. 2020) served as category systems. These categories are hypotheses testing, interaction between actors, causality as well as monitoring, evaluation and learning processes.

The analysis reveals that learning processes in regulatory experiments are influenced by several factors (Bischoff et al. 2020): First, preparatory measures help to decide whether a regulatory experiment is necessary and how to ensure the integration of all stakeholders. Second, effectively incentivizing a heterogeneous group of actors to participate increases learning. Third, control groups and randomization procedures produce results that are more representative and robust. Fourth, the time frame influences the success of a regulatory experiment. Fifth, costs are often a barrier to experiments and can prevent learning processes. Sixth, testing several design options in parallel supports learning processes.

Seventh, increasing the external validity of regulatory experiments increases their transferability.

The results provide recommendations for the practical implementation of regulatory experiments to stimulate learning processes as well as topics for future research.

Outlook

To further analyze the findings of Bischoff et al. (2020), the research team selected 10 cases from the initial sample which were expected to provide additional insights on the topics and conducted a total of 24 interviews with experimenters, scientific experts, participants and other stakeholders of the experiments. The interview transcripts are currently analyzed regarding the learning conditions for up-take of regulatory experiments. We focus on the transferability and scalability of experiment results as well as on unintended consequences. We expect to publish the study in the beginning of next year. On the basis of all project results, the research team will outline practical guidelines on how to conduct regulatory experiments and to govern innovation as well as generate learning processes.

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In chronological terms, all humans age by one year every year. Physiologically, we age quite differently. A 70 years old person can be as healthy as a 50 years old one and vice versa. Yet, how shall we assess physiological age? The gerontological literature has established the frailty index as a straightforward metric of health, morbidity, and aging. The frailty index simply counts the relative number of health deficits that an individual has from a sufficiently long list of potential deficits. The frailty index has excellent predictive quality for death and other aging-related events such as institutionalization in nursing home. In health economics, health deficits measured by the frailty index have been used to replace non-observable health capital. This allowed to quantify life cycle models of health behavior and to communicate with medical scientists and gerontologist using the same metric of human health.

While physiological aging is individual-specific, it follows, on average, some strong regularities. For example, the frailty index has been shown to increase exponentially with chronological age. On average, we develop about 3 to 4 percent more health deficits per year. For given age, later born cohorts display less deficits. Women display more deficits than men but men display faster aging. These and other regularities have been established in a series of studies at the level of individuals for populations from Europe, North America, China, and several developing countries.

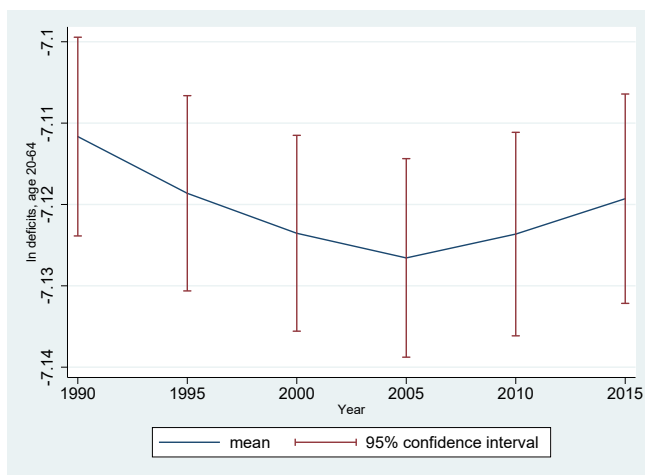


Figure 1 — Average health deficits across the world: 1990-2015

In a recent study, we extended the research agenda from the individual level to the country level (Dalgaard et al., 2018). From a macro perspective, the average health deficit index in a population equals the average prevalence rate of the relevant health conditions. Using data from the Global Burden of Disease Study, we constructed health deficits indices of for 191 countries at five year intervals between 1990-2015. We first showed that the above cited key regularities of aging are also ob-

served at the country and world level. We then showed that the working-age population of the world is not becoming older in physiological terms (Fig.1). This is a remarkable result since, in chronological terms, the working-age population aged by about 5 years in the observation period. Similar trends are observed at the country level. In Germany, for example, the working-age population aged chronologically by 4 years over the last quarter of a century but it aged not at all in physiological terms.

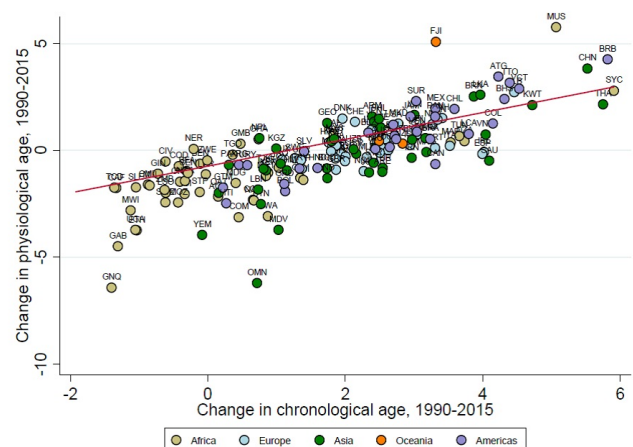


Figure 2 — Changes in physiological and chronological age across the world, 1990-2015

In order to better understand these trends we used the frailty index to construct average physiological age and regressed it on average chronological of the workforce in first differences across countries. We found that physiological age changes with chronological age but less than one for one (see Fig. 2). Each additional year of chronological age is associated with 0.85 years in physiological terms. Moreover, the link between chronological age and physiological age shifts down over time. The point estimate suggests that physiological age in 2015 is about 75% lower than in 1990, conditional on chronological age. Since the change occurs over a 25 year period this amounts to an annual reduction of about two percent per year. This result corresponds with findings at the micro level showing that, for given age, the health deficit index of individuals from 14 European countries declined by 1.5 percent per later year of birth.

Finally, we found that physiological aging significantly reduces labor productivity growth. Taken together, our findings suggest that if economic growth has been declining over the past quarter of a century, physiological aging is unlikely to be part of an explanation in light of its relative constancy over time.

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Am 17. November 2020 veranstaltete das cege die Podiumsdiskussion „Die europäische Fiskalunion — Solidargemeinschaft oder Transferunion?“, erstmals in Form eines Webinars. Das Thema der Veranstaltung war motiviert durch die Initiative „NextGenerationEU“, die eine Antwort der EU auf die ökonomischen Herausforderungen der Mitgliedsstaaten im Zuge der Corona-Pandemie und ein supranationales Unterstützungsinstrument darstellen soll. Über die rechtliche, ökonomische und politikwissenschaftliche Bedeutung dieser Entwicklung diskutierten Prof. Dr. Dr. h. c. Hans-Detlef Horn (Professur für Öffentliches Recht, Universität Marburg), Prof. Dr. Gernot Müller (Professur für Internationale Makroökonomik und Finanzen, Universität Tübingen) und Prof. Dr. Thomas Rixen (Professur für Internationale und Vergleichende Politische Ökonomie, Freie Universität Berlin). Moderiert wurde die Veranstaltung von Prof. Dr. Frank Schorkopf (Professur für Öffentliches Recht und Europarecht, cege/Universität Göttingen).

Einen ersten inhaltlichen Impuls lieferte Frank Schorkopf, indem er die juristische Dimension andeutet. Während Wirtschaftspolitik grundsätzlich eine nationale Kompetenz ist, wird die Kompetenz über Währungspolitik im Euroraum auf eine supranationale Ebene übertragen. Bei Fiskalpolitik gilt es also stets, auch die damit zusammenhängende Kompetenzverteilung und die Passung zwischen diesen Aspekten zu reflektieren.

Hans-Detlef Horn attestierte dem Aufbauplan der EU eine hohe politische und juristische Kunstfertigkeit und führt dies auf den Krisenmodus zurück, unter dem der Plan entstand. Er greift die grundsätzliche Idee auf, dass die EU mehr Eigenmittel bekommt, um bei wirtschaftlichen Schocks autonom zu reagieren und die sogenannte fiskalische Lücke zu schließen. Für die grundsätzliche fiskalpolitische Ausrichtung betont er den möglichen Schnitt, der nach Auslaufen des aktuellen mehrjährigen Finanzplans im Jahr 2027 eintreten kann. In diesem Zusammenhang rechnet er damit, dass die Umstellung des Liquiditätsprinzips auf das Solvabilitätsprinzip, auch als Schuldentragfähigkeit zu verstehen, die Haushaltsverfassung der EU besonders verändert. Allgemein schätzt er die Konzeption des Aufbauplans als juristisch komplex ein und stellt das Spannungsfeld zwischen Primär- und Sekundärrecht und die unterschiedlichen Auswirkungen für gesetzliche Vorhaben auf nationaler oder EU-weiter Ebene dar.

Gernot Müller sieht in Transfers ein Instrument, um unterschiedliche konjunkturelle Entwicklungen zwischen den Mitgliedsstaaten auszugleichen. Mit der gemeinsamen Währungsunion entfällt für die Mitgliedsstaaten das Instrument der Geldpolitik zu diesem Zweck. Er zeigte, dass die Corona-Pandemie einen wirtschaftlichen Schock mit unterschiedlich starken Auswirkungen auf die Volkswirtschaften der EU-Mitgliedstaaten darstellt und daher im Prinzip durch eine gemeinsame Fiskalpolitik ausgeglichen werden könn-

te. Er stellte im Anschluss die grundsätzliche Konzeption und Schwachstellen von NextGenerationEU dar. So wird aufgrund der Zweckbindung viel Strukturpolitik betrieben. Außerdem ist der Zeitpunkt ab 2021 zu spät, da dort voraussichtlich bereits eine konjunkturelle Erholung eingesetzt haben wird. Als dritten Punkt kritisiert er, dass sich nur ca. 30 % des Zuteilungsschlüssels an Konjunkturerinbrüchen durch die Corona-Pandemie orientiert.

Thomas Rixen nutzte den Ausdruck „Notfallföderalismus“, um zu beschreiben, dass in einer Krise supranationales Handeln an Bedeutung gewinnt und die EU diese Bedeutung aktuell, auch in Form der hier diskutierten Maßnahmen, wahrnimmt. Der Wiederaufbaufonds, der in diesem Zusammenhang etabliert wurde, stellt noch keine politische Grundsatzentscheidung dar und ist keine letztgültige Antwort auf die Frage, wie die grundsätzliche Kompetenzverteilung zwischen der EU und ihren Mitgliedstaaten langfristig aussehen wird. Herr Rixen beschrieb weiterführend, dass in der EU die negative Integration – also marktschaffende Freiheits- und Eigenschaftsschutzrechte sowie eine starke Zentralbank – die positive Integration – die Zusammenführung und Koordinierung wirtschafts- und fiskalpolitischer Entscheidungen – dominiert.

Im Anschluss an die Statements der Referenten bestand Raum für Fragen aus dem Auditorium. Diese bezogen sich zum Beispiel auf die fiskalische Lücke und darauf, ob NextGenerationEU möglicherweise ein Schritt in Richtung positive Integration und Reduktion dieser fiskalischen Lücke ist, zum Beispiel in Form einer geplanten Plastiksteuer. Es wird zudem nochmals die juristische Perspektive aufgebracht, indem die demokratische und gesetzliche Legitimation etwaiger fiskalpolitischer Kompetenzverlagerungen angesprochen wird. Ein Blick in die Zukunft wirft die Frage auf, welche Schritte der Ratifizierung der nationalen Parlamente und möglicher Verfassungsbeschwerden folgen werden. Hiermit zusammenhängend werden auch praktische und unmittelbare Sachverhalte diskutiert, zum Beispiel, was nach der vorläufigen Blockade des Programms mittels eines Vetos durch Ungarn und Polen passiert und was eine spätere juristische Aufarbeitung für die unter Umständen bereits erfolgte Etablierung eines solchen Programms bedeutet. Insgesamt halten die Diskutanten fest, dass NextGenerationEU durchaus das Potenzial hat, einen Paradigmenwechsel in der fiskalpolitischen Relevanz der EU darzustellen. Gleichwohl sind noch zahlreiche Fragen der theoretischen Konzeption sowie der praktischen Umsetzung ungeklärt, die Gegenstand anhaltender Debatten in politischen Verhandlungen sowie akademischen Aufarbeitungen sein werden.