



PolicyMatters

The Journal of the Goldman School of Public Policy
UNIVERSITY OF CALIFORNIA, BERKELEY



Confronting Wealth Inequality A Wealth Tax for the States and a Conversation with Barney Frank

Also in this issue:

- *Transboundary water management in Bangladesh*
- *A conversation with Wendy Davis*
- *The community college transfer function in California*
- *Patent restrictions in India*
- *Measuring competition among Chile's schools*
- *India's shadow economy*

TRANSFER BY DEGREES: REFORMING THE COMMUNITY COLLEGE TRANSFER FUNCTION IN CALIFORNIA

Shawn Brick

Edited by Joe Broadus and Paula Wilhelm

The current system by which California community college students prepare for and are admitted to a University of California campus relies on the review and acceptance of individual community college courses. This paper discusses shifting to degree-level review, a model already adopted by the California State University and by public universities in other states. After analyzing the trade-offs and challenges involved in making this change, the recommendation is to adopt the new “transfer by degrees” approach.

When I was eighteen, I was admitted to the University of Wisconsin at Madison. Fear of the unknown and pressure from my parents to choose a more economical option led me to start instead with two years of community college. I successfully transferred and graduated with a double major (history and anthropology) from Madison four years later—exactly on time. I met with my academic advisor for the first time just weeks before graduation. She looked at me with panic, saying, “How do you know you’re going to graduate? You should have come a year ago. Let me look at your record ... well ... ahem. It looks like you’re all set.”

Fifteen years later, my penchant for bureaucratic complexity has been very useful in my role as the Associate Director for Transfer Admissions at the University of California (UC) Office of the President (UCOP), and I see how challenging it can be for many students to navigate the transition from community colleges to California’s four-year institutions. Students must track which classes confer credit, which meet general education requirements, and which meet lower-division major requirements, all of which can differ between the California State University (CSU) and UC systems, as well as among campuses within each system.

A clear transfer process is critical for a number of reasons. First, there is a growing consensus that California needs more college graduates to meet its workforce needs. Community colleges are critical to solving this problem: two-thirds of all college and university enrollees in the state are at one of 112 community colleges. Contrast this with only 6 percent at UC and 13 percent at CSU. (Another 15 percent are at private institutions.) Yet only 30 percent of community college students achieve their educational goals and either transfer to a four-year institution or complete an associate degree. Second, the California Community College (CCC) system is the most diverse of the three state-sponsored systems of higher education. It has the highest proportion of students from historically underrepresented minority groups, low-achieving high schools, and low-income backgrounds. In other words, the very individuals who would benefit most from the social mobility associated with college degrees frequently start at community colleges. Finally, for both the state and students, the least expensive route to a bachelor’s degree is to complete their lower-division coursework at a community college.¹

In 2010, Governor Schwarzenegger signed into law Senate Bill 1440, which instituted Associate Degrees for Transfer

(ADTs). A student who completes an ADT at a California community college is guaranteed admission and junior-level standing within the CSU system. UC was asked to participate in the same pathway, although its constitutional autonomy from the state protected it from the directive somewhat. This was a paradigm shift. Until this legislation passed, each four-year university had established separate agreements with each community college about how courses would transfer. Now, the ADTs are locally-managed roadmaps that each student can follow to compete for admission to any CSU.²

The Transfer “Alphabet Soup”

UC: University of California – System of ten research universities (nine with undergraduate programs) and 244,000 students

CCC: California Community College – System with 112 campuses statewide; enrolls 2.1 million students

CSU: California State University – System of 23 campuses with 455,000 students enrolled

ADT: Associate Degrees for Transfer – Degrees offered by California community colleges that guarantee admission to a CSU campus at the junior level

ASSIST: Website and database that provide information on all course-to-course articulation in California (between each of the 112 community colleges and the 42 four-year universities)

IGETC: Intersegmental General Education Transfer Curriculum – Statewide series of general education courses that may be used to satisfy lower-division general education requirements for transfer students (distinct from major-specific requirements)

C-ID: Supra-course numbering system that is used to assemble the building blocks of the Transfer Model Curriculum and Associate Degrees for Transfer

TMC: Transfer Model Curriculum – Statewide template for ADTs, which can vary somewhat in content between community colleges; any ADT must comport with the relevant TMC

My role throughout the first few years of this change was largely to manage the public messaging around UC’s fairly minimal participation in this new pathway. The response of University leadership (faculty and administration) to the introduction of ADTs was almost universally to question “what is broken about the current system?” Indeed, UC has a strong track record of serving transfer students; we

enroll and graduate far more transfer students than other highly competitive research universities. However, the way we select students for admission and treat their credits once they transfer was developed for a different era, a time when students could apply to a single campus and reasonably expect to get in. Now transfer students need to prepare to apply to multiple UC campuses simultaneously—yet each campus has different admission requirements and makes different decisions about whether or not to approve individual community college courses for transfer credit.

In this paper, I outline the evidence for, and potential trade-offs involved in, moving to the new ADT model and the ways the organizational culture at UC may make this change difficult. Ultimately, I recommend that the University adopt the ADT model and institute “transfer by degrees.” The twin goals of this reform are to graduate more students and to serve a more diverse set of Californians. Simplifying transfer should enable current students to move more quickly through the system, making space for additional enrollees. Meanwhile, students that the system now fails—particularly first-generation and minority students—should become more likely to succeed.

Course-by-Course, College-by-College: Current Practices at UC

Currently, UC evaluates the academic credentials of transfer applicants using a “course articulation” approach. Broadly speaking, this involves the four-year institution reviewing the Course Outline of Record for each community college course to evaluate whether or not the course should count toward the completion of a degree at that institution. This makes sense from the perspective of the four-year university: each university wants to protect its imprimatur by issuing degrees only to students who have completed its approved curriculum. Furthermore, universities want to ensure that transfer students are prepared for the rigors of upper-division study. For example, a university would not want to admit a student to junior or senior status in biology if she had not yet completed an adequate general chemistry sequence. The degree would ultimately mean less without that course, and the student would likely struggle without having completed it before transferring.

UC currently has articulation conducted at two levels of authority. At the system level, basic transferability of a course is established for all nine undergraduate campuses. Basic transferability means that a course qualifies for credit (elective or otherwise) and satisfies a basic seven-course pattern minimally required for UC admissions. At the campus level, each course is again reviewed to see if it meets the campus requirements for general education and major preparation. Furthermore, students can pursue a joint CSU and

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UC general education curriculum called the Intersegmental General Education Transfer Curriculum (IGETC). A single course may—or may not—satisfy all these requirements. For example, Anthropology 1 at Berkeley City College qualifies for UC transfer credit, satisfies the UC social science requirement as part of the seven-course pattern, satisfies the IGETC social science requirement, meets the UC Berkeley biological sciences or social sciences requirement as a part of its general education pattern, and may be considered equivalent to the UC Berkeley biological anthropology class required for anthropology majors. But these decisions can differ by UC campus: UC Merced does not include Berkeley City College's Anthropology 1 in its anthropology department's articulation agreement.

Students must navigate these different levels of articulation by campus and determine whether completing a given course is actually required for admission. No UC campus bars students from admission to the anthropology major if they are missing the Anthropology 1 course discussed above. Students may complete the equivalent after being admitted. However, in more selective majors, students may be denied admission for missing a course or courses. For example, most biology programs at UC require that students complete a full year-long sequence in biology, chemistry, calculus, and, in some cases, organic chemistry.

Despite political pressures felt at UCOP to reduce complexity, much decision-making authority around course articulation remains local. As mentioned above, the UC system has a single, consistent assessment of the minimum transferability of courses, and the CSU and UC jointly assess courses for satisfying IGETC. However, each UC campus makes independent decisions, either via campus-wide faculty committee or within individual academic departments, about how a course articulates and whether or not it is required pre- or post-transfer. This is a source of frustration for students, whose courses might satisfy requirements at some UC campuses but not all. While all of this complexity may be reviewed in detail on the www.assist.org website (ASSIST), it requires that a student access no fewer than three ASSIST reports to successfully self-advise.

On one hand, it is reasonable that degrees at different campuses require different preparation. For example, six of the UC campuses offer a biological/experimental flavor of psychology, while the other three offer social psychology. In this case, it is logical that the kinds of courses required to prepare students for upper-division work will differ. However, the rationale for variation in requirements within the very same discipline among different UC campuses is less clear, e.g., the Berkeley City College Anthropology 1 case. It stretches credulity to assert that the upper division coursework at Merced is qualitatively different or more rigorous in a way that justifies not articulating a course that Berkeley does. The real explanation for this variation is a lack of coordination across departments and campuses.

Degree-to-Degree: More Efficient, More Inclusive

The new model can be construed as degree-to-degree, rather than course-to-course, articulation. A student completes an approved Associate Degree for Transfer (ADT) in History, for example, and she knows that she will start at the junior level at any CSU that accepts that ADT. The student would still need to compete for a spot at any individual CSU campus on the basis of grade point average, but she would know that the courses she took at community college were the right ones. This system does not completely eliminate the bureaucracy of transfer for the student, but it localizes it. Instead of checking the ASSIST website for requirements for every CSU

campus, she simply follows the steps to complete the ADT in History at her community college. The degree encompasses everything the student needs to transfer to CSU, including general education and major-specific courses.

Organizational Politics of Articulation

The resistance to this model is strong among university faculty. Faculty value the curricula they have developed and are often skeptical about the quality of courses at community colleges. It could be argued that this resistance is justifiable at UC because a) as a research institution, the nature of degrees is more heterogeneous and dependent on the research interests of faculty on the different campuses, and b) a UC education is more rigorous than that offered at a CSU. And it's true that while UC transfer students graduate at similar rates as UC freshmen and have comparable grad-

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uating GPAs, they do appear to struggle in their first year post-transfer, as evidenced by their junior-level grades.

Meanwhile, though UC system-wide faculty committees are often sympathetic to statewide priorities, committee membership typically lasts only one to two years. This makes management of sustained, systemic change particularly difficult.

Campus administrations are resistant as well. As with any bureaucratic process, those whose jobs are rooted in managing its complexity are resistant to changes that devalue their expertise. At present, maintaining articulation agreements and negotiating with faculty over course-to-

course review is undertaken by Articulation Officers. This role has been professionalized to such a degree that California has its own professional association—the California Intersegmental Articulation Council—that meets multiple times per year. Articulation is central to transfer and yet, given its nature, most CSU and UC Admission Directors have delegated responsibility for all the excruciating detail to the Articulation Officers. Those with the greatest investment in the current system have been given the keys to the transfer kingdom.

Evidence and Trade-offs

As previously noted, I support UC moving to the new “Transfer By Degrees” model. The evidence suggests that fewer and simplified pathways for transfer should improve student outcomes, particularly for students already facing disadvantages. As more students succeed in transferring and graduating on time, California’s public colleges and universities will have space to serve additional students. Yet it is important to acknowledge the limitations in our knowledge as we move forward, as well as some important trade-offs. I will recommend modifications to the ADT model to accommodate the unique role that the University of California plays in the state.

Evidence: Limiting choices improves success

The associate degree pathway for transfer has been implemented in other states, although direct evidence on its success is limited. Shulock and Moore at the Institute for Higher Education Leadership and Policy made an influential case for California to adopt the associate degree model in 2009. They cite the success of policies in Florida, Washington, and Arizona in reducing the number of units accumulated by transfer students en route to their degrees³—a phenomenon that should conserve student time and money. Crosta and Kopko found that earning an Associate of Arts or Science degree made students who transferred more than twice as likely to graduate with a bachelor’s degree within four years.⁴ Both studies suggest the ADT model improves the efficiency of transfer. On the other hand, Handel and Williams found no evidence that statewide standardization led to higher rates of transfer from community colleges.⁵

Of course, current articulation practices are not always evidence-based, either. Some faculty members have tried to use student success rates as a way to identify problematic community college courses: they noticed that students transferring from a particular community college were struggling with upper division work at UC, and consequently pulled articulation for targeted courses. In another case, however, a faculty member confessed that a current requirement for his major was probably just a historical artifact from some long-forgotten faculty member who felt strongly about it. Incidentally, in that example, the department removed the requirement after having a conversation with its sister campuses.

Perhaps the most persuasive evidence is indirectly related to the associate degrees. In “The Shapeless River,” Scott-Clayton writes:

[C]ommunity college students are often confused and sometimes overwhelmed by the complexity of navigating their community college experience. And the evidence from other fields (such as consumer choice and financial planning) is very strong that individuals’ ability to make good decisions—or to make any decision at all—is adversely affected by several of the factors present in the community college context.⁶

She cites evidence that these effects are particularly strong for first-generation, low-income, and minority students.

Indeed, other researchers have come to similar conclusions within the higher education context. Rosenbaum, Stephan, and Redline compared outcomes at public community colleges to those of for-profit two-year colleges. They contrasted the success of “package deal” programs offered at private colleges with the “information overload” experienced at community colleges.⁷ They found the information necessary to navigate the extraordinary flexibility at the public colleges was hurting outcomes, whereas the “structured program ... alleviates the burden of collecting information and the risk of making mistakes.”

A program at the City University of New York called Accelerated Study in Associate Programs (ASAP) has rightfully garnered a great deal of attention in recent years. According to a 2015 report by education and social policy research organization MDRC, the graduation rate of ASAP students was twice that of their peers.⁸ There are several aspects of

the program that explain its success, including additional advising and services for students. However, ASAP is also very structured. Students are obliged to attend full-time and enroll in “blocks” of courses. Scott-Clayton speculates that

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although limiting student options is controversial, “a middle option would be for schools to provide the equivalent of a ‘prix-fixe’ menu, offering a limited selection of pre-packaged college pathways that students could choose from instead of planning their schedules ‘à la carte.’”

Using this metaphor, the ADTs are a prix-fixe option for transfers: by embedding a single pathway per major in each community college’s curriculum, students can more easily manage their own progress. Furthermore, making the ADT pathways valid for all of California’s public universities allows students to prepare simultaneously for multiple institutions without the information overload associated with reviewing multiple articulation agreements on ASSIST. Research cited above on college planning and outcomes suggests that the simplified pathways would particularly benefit those students least well prepared to navigate the bureaucracy. Therefore, the ADT model would advance dual goals: more efficient transfer for a more diverse set of students.

Trade-off: Rigor versus simplicity

Faculty fears that adopting ADTs would lead to a loss of academic rigor should not be taken lightly. Indeed, the primary trade-off could be seen as maintaining rigor versus promoting simplicity. Despite the apparent success

of most transfer students at UC, not all faculty skepticism is unfounded. As mentioned above, the data do show that grades in the first year at UC are slightly lower for transfers than for their peers (although they catch up by graduation). Community colleges in California are underfunded and it seems reasonable to assume that this impacts quality. Anecdotally, UC faculty members have expressed concern that community college courses require less writing and more multiple-choice exams than is ideal. By using individualized course review, UC faculty believe they can weed out the community college courses that fail to develop writing and critical thinking skills.

Inevitably, there will be compromises. The CSU and the UC are different institutions and the level of rigor in the ADTs may need to be strengthened to adequately prepare students for success at a UC. The Executive Director of the Campaign for College Opportunity, which helped author SB 1440, acknowledges this in her latest opinion piece in the *Sacramento Bee*. “The UC can and should customize the CSU model to reflect UC’s more rigorous admission requirements,” she writes.⁹ Another alternative would be for UC to allow the ADTs to qualify a student for admission, but require the student to take certain courses post-transfer. Yet a third alternative would be for UC to develop a completely separate set of associate degrees, distinct from the CSU-oriented degrees. All three of these policy options would trade off the simplicity of adopting the ADTs wholesale in exchange for better preparation for UC.

Trade-off: Layering versus replacement

One concern about creating an associate degree pathway to UC is that it layers on another option for students, increasing rather than reducing complexity. This concern could be addressed by completely eliminating course-to-course articulation or other paths to transfer that could compete with the ADT route. Yet this decision is unlikely, in part because the CCC and CSU faculty have not yet created ADTs for many majors, notably those in the STEM fields. Both solutions will need to coexist, at least in the short- to medium-term. It may be that community colleges must play a larger role in helping students understand whether to pursue an ADT or rely on websites like ASSIST to parse out the requirements for transfer.

Policy Prescription: Associate Degree for Transfer PLUS (ADT+)

The policy prescription advanced here is for UC to adopt a degree-to-degree articulation model, at least for some majors and on some campuses. Why make this recommendation? First, the reform passes the common sense test. Several aspects of the current system do not: it is a stretch to claim that the differences in articulation across the UC system all represent variation necessary to prepare students, and are not simply the result of decentralized decision-making. Second, evidence on limiting student choices suggests that “information overload” is a real barrier to success. The prefix menu of ADTs will certainly reduce the number of choices that students must make to navigate the current à la carte model. Third, and most importantly, the ADT solution may help address significant and long-standing equity concerns about community colleges’ success in serving underrepresented and underserved students.¹⁰

It makes sense for UC to modify the Associate Degrees for Transfer developed for the CSUs. However, to reap the benefits of increased simplicity, this should be done with as few caveats as possible. The sensible policy proposal would be an “ADT+.” The “PLUS” would include additional courses above and beyond the ADT requirements, which students would take either at their community colleges or post-transfer.

For example, the ADT in Biology currently requires that students complete year-long sequences in biology, chemistry, calculus, and physics. A UC ADT+ would additionally ask students to complete a statistics course and an organic chemistry course since most UC campuses have these courses as part of their degree requirements. The Davis, Merced, and Irvine campuses would require some additional courses post-transfer, but under this proposal, they would still admit the students who had completed the ADT+ in Biology.

Implementation

Shared governance at UC means that the faculty and the administration jointly manage the University. Curriculum and admissions are squarely within the purview of the faculty, which means that the process by which the administration proposes these changes is important. A key step was

taken this year when a joint faculty and staff committee convened by President Napolitano recommended pursuing a review of the Associate Degrees for Transfer. The Transfer Action Team, as it was called, included Academic Senate leadership.¹¹

In order to fully enact this reform, I recommend five actions based on my own experience working on transfers at UCOP and on information in a report by the UCLA Center for the Study of Community Colleges on transfer reform in other states.¹²

Find faculty champions who can lead a sustained, multi-year effort to enact reform.

These transfer issues are remarkably complex; faculty members who rotate off committees each year will never develop the necessary expertise. Nevertheless, faculty support is key to the reform's success. Some key benefits should be emphasized to convince faculty of the benefits for this change:

1. The ADT+ approach recognizes that the hallmark of a UC degree involves great academic rigor. It builds upon the foundation of transfer degrees to the CSU and asks students for more in order to prepare them for upper-division coursework at UC.
2. Students who complete the ADT+ pathway will actually be better prepared for upper division coursework than the current transfer applicant pool. Most UC campuses currently require students to complete fewer lower-division major preparation courses prior to admission than would be required by the ADTs.
3. UC faculty could help oversee the design and content of the ADTs by sending UC representatives to the CSU/CCC review committees. This would reduce overall UC faculty workload by outsourcing the laborious process of course review to statewide committees.

Ensure top-level engagement at both the UCOP and individual campuses.

Given that admissions offices on the various UC campuses do not report to the admissions office at UCOP, buy-in from top-level administrators across the system will be key. Three key arguments should resonate with Admissions Directors, Enrollment Managers, and Budget Directors.

1. If UC does not adopt ADTs in some form, the CSU will attract otherwise well-qualified UC transfer applicants through the ease of the ADT pathways.
2. There are potential administrative cost savings in reducing the faculty and staff time devoted to reviewing individual courses.
3. The ADT+ pathway simplifies the transfer process significantly for students, helping the most under-resourced students find their way to a UC campus.

Do not let the details bog down the conversation.

The common complaint about this type of reform is that it does not appreciate the complexity of articulation, e.g., the nuanced way in which an introductory history course might differ between campuses. But in my opinion, this trade-off must be made to avoid recreating the same complexity that plagues students currently.

Collaborate with CSU and CCC faculty from the very beginning.

In 2010, UC convened its own faculty to review transfer complexity, but very little changed. Engaging with their colleagues in CSU and CCC will foster trust in the new practice of ADT.

Engage appropriate staff members in generating analysis to kick-start conversations.

While faculty need to approve any proposals, system-wide staff and faculty champions who have the expertise can play an important role by providing analysis and recommendations for review by their colleagues.

Conclusion

The time for degree-to-degree transfer has come. For the University of California, this means plugging in to the pathway that already exists within the state, but augmenting it with additional requirements to prepare students for the rigor of UC. The Associate Degree for Transfer PLUS (ADT+) simplifies the pathway from community colleges to a UC campus while protecting standards of academic preparation. Adopting ADT+ would help California capitalize on the strengths of its community colleges and universities to expand educational opportunity and attainment for all.

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Endnotes

- [1] Hans Johnson, *Defunding Higher Education: What Are the Effects on College Enrollment?* (San Francisco: Public Policy Institute of California, 2012).
- [2] In reality, about 80% of the CSU campuses have signed on to any given major pathway.
- [3] Nancy Shulock and Colleen Moore, *Crafting a Student-Centered Transfer Process in California: Lessons from other States* (Sacramento: Institute of Higher Education Leadership & Policy, 2009).
- [4] Peter M. Crosta and Elizabeth M. Kopko, *Should Community College Students Earn an Associate Degree Before Transferring to a Four-Year Institution?* (New York: Community College Research Center Working Paper, 2014).
- [5] Stephen J. Handel and Ronald A. Williams, *The Promise of the Transfer Pathway* (New York: College Board Advocacy and Policy Center, 2012).
- [6] Judith Scott-Clayton, *The Shapeless River: Does a Lack of Structure Inhibit Students' Progress at Community Colleges?* (New York: Community College Research Center Working Paper, 2011).
- [7] James E. Rosenbaum, Jennifer L. Stephan, and Julie Redline, *Community College: The Unfinished Revolution* (Web: Issues in Science and Technology, 2013).
- [8] Susan Scrivener, Michael J. Weiss, Alyssa Ratledge, Timothy Rudd, Colleen Sommo, and Hannah Fresques, *Doubling Graduation Rates: Three-Year Effects of CUNY's Accelerated Study in Associate Programs (ASAP) for Developmental Education Students* (New York: MDRC, 2015).
- [9] Michele Siqueiros, *UC needs to simplify student transfer rules* (Sacramento: Sacramento Bee, November 29, 2014). <http://www.sacbee.com/opinion/op-ed/soapbox/article4196547.html>.
- [10] Nancy Shulock and Colleen Moore, *Divided We Fail: Improving Completion and Closing Racial Gaps in California's Community Colleges* (Sacramento: Institute of Higher Education Leadership & Policy, 2010).
- [11] UC Transfer Action Team, *Preparing California for Its Future: Enhancing Community College Student Transfer to UC* (Oakland: University of California Office of the President, 2014).
- [12] Carrie Kisker, Richard Wagoner, and Arthur Cohen, *Implementing Statewide Transfer & Articulation Reform: An Analysis of Transfer Associate Degrees in Four States* (Los Angeles: Center for the Study of Community Colleges, 2011).

THE SHADOW ECONOMY: CAUSES, CONSEQUENCES, AND INSTITUTIONS THE CASE OF THE INFORMAL WASTE SECTOR IN INDIA

Ravi Agarwal

Edited by Sarah Steele Wilson

The informal sector of the Indian economy has successfully delivered many services and products more effectively and at lower costs than the formal sector. The entrepreneurialism of this sector can be harnessed more efficiently by implementing institutional changes and developing more thoughtful policies. This report describes the tradeoffs between the informal and the formal sectors, including the risk and transaction costs of the former and the taxation costs of the latter. A discussion of the reasons behind the informal sector's existence in India and a case study on the waste management economy follow. The report argues that integrating the informal waste sector into the mainstream economy will increase not only the well-being of workers engaged in this sector but also the general welfare of the society. The report ends with policy recommendations to achieve this integration.

An Introduction to Shadow Economies

Although there are many disagreements about the definition of a shadow economy, one of the broadest describes it as a set of economic activities that circumvent government regulations, taxation, or observation.¹ These include both legal activities like construction and plumbing and illegal ones like drug dealing, gambling, and smuggling. Because the government does not monitor the informal sector at any level, it is therefore not taxed or regulated. This paper focuses specifically on legal activities within the informal “shadow” sector in India and discusses the informal waste management sector as being at the margin, lying between the formal and informal sectors of the economy. In this report, I explore how the informal side of waste management could be integrated more efficiently into the formal economy.

We must first try to understand the segments, causes, and consequences of the informal economy, and why we need to study it. Informal sector activities include paid work for informal enterprises such as small retail stores or taxi services, domestic work without a regular contract, casual

day labor without a fixed employer, unregistered or undeclared work for formal or informal firms, and temporary and part-time work for formal firms.

Studies on the size of the informal sector of India's economy differ in their measurements of its contribution to the national GDP and of the percentage of the workforce it employs. A 2013 report by Credit Suisse says that 50 percent of India's GDP is from the informal sector,² while a 2005 paper by Friedrich Schneider estimates that it generated only 23 percent of GDP in 1999–2000.³ The Credit Suisse report also states that approximately 90 percent of employment in India is informal,⁴ while the National Sample Survey Organization in India reports this figure to be 75 percent in rural areas and 69 percent in urban areas.⁵ It should also be noted that GDP growth data does not include the contributions of the informal sector, and is likely underestimated by a significant percentage. Although these numbers vary from report to report, they consistently agree that the informal sector is an important part of the economy, employs a significant

proportion of people, and has been growing.^{6,7,8} Because of these factors, it is important to understand this sector more thoroughly, look at the causes and consequences of being in this sector—for workers, business owners, investors, and customers—and consider whether it makes sense to integrate these activities into the formal economy. If so, what institutional changes can help integrate them effectively?

Generally speaking, two primary factors contribute to the existence of an informal sector⁹ and provide insight into the costs associated with working in the formal sector.

1. Avoidance of social security contributions and income, value-added, or other taxes: This tax burden is one of the main drivers of the informal sector. A larger tax burden in the formal sector increases the incentive to work in the informal sector.

2. Avoidance of legal labor market standards (such as minimum wage, maximum working hours, or safety standards) and administrative procedures (such as statistical questionnaires or other forms): Such standards and regulations increase the burden of being in the formal sector by increasing labor costs. The higher cost of formal labor pushes the formal sector to rely on or outsource many of its activities to the informal sector and thus contributes to the expansion of the informal sector.

Yet working in the informal sector can also be costly. As informal employment does not come under labor law and regulations, workers in the informal sector remain underpaid and often work in unhealthy conditions for long hours. Workers always risk being “caught” and penalized for avoiding taxes, and this threat is often used to harass them. The growth potential of both a worker’s role in an enterprise and of the enterprise itself is limited, because an employee in the informal sector cannot distinguish herself with high-quality work or be reported to the authorities for inappropriate activities. Essentially, the choice to work in the formal or informal sector depends on the trade-offs involved for the business owner or worker.

Other factors beyond taxation and regulation also drive the existence of the informal sector in India. For example, India has adopted a policy model that promotes high-skilled work in the formal sector at the expense of the informal sector, and the urban policymaking process has been biased toward

the formal sector because it brings foreign direct investments and tax revenue. This policy model devotes very little attention to adequate job training and support, affordable housing, and other necessities relevant for low-skilled jobs like those in the informal sector.¹⁰ This exclusive promotion of the formal sector has significantly threatened informal urban livelihoods, which have also been overlooked in urban renewal schemes. Street vendors face bribes, confiscation of goods, and evictions; construction workers face displacement because of excessive mechanization; and home-based producers face single-use zoning regulations and a lack of basic infrastructure services.

As a growing number of people migrate from rural to urban areas in search of jobs, the lack of coherent policy addressing this influx leaves migrants with no viable alternatives to the informal sector. At the same time, the formal sector benefits from the existence of informal workers and the compendium of low cost services they offer. These exclusionary urban policies, together with the benefits they afford the formal sector, create a barrier that prevents those engaged in the informal sector from shifting towards the formal sector. This barrier causes inefficiencies that eventually have adverse impacts on both sectors.¹¹

The Informal Waste Sector at the Margin

The informal recycling economy in urban solid waste management has been very effective at supplementing and subsidizing the formal system, which is largely provided by municipal corporations. The informal sector provides employment to more than 10 million people and operates competitively with high levels of efficiency. It has flourished over the years and the sector as a whole is profitable and generates surpluses. Its most striking feature, illustrated in figure 1, is that while the activities at the bottom of the waste economy pyramid exist largely in the informal sector, the activities at the top function in the formal sector. Profitability of the work increases from bottom to top, as does the dignity and respectability of the specific activity within the economy. Moving from top to bottom, one finds increasingly unhealthy working conditions and striking levels of poverty. Because this waste management economy exists in both sectors and consists entirely of economically viable activities, it functions at the margin and is thus of special interest for this paper.

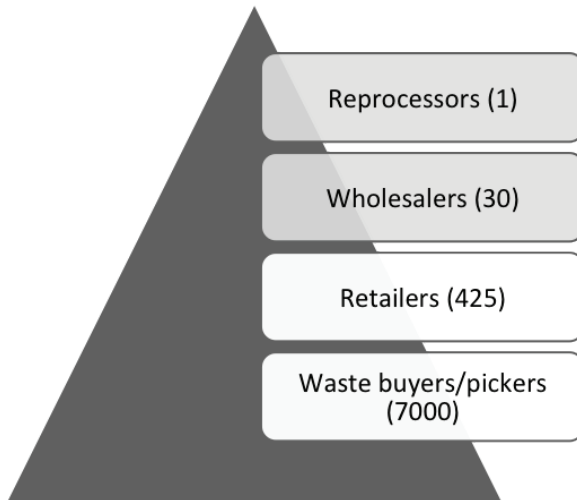


Figure 1: The waste economy pyramid

The waste economy is made up of the following activities:

1. **Waste pickers:** waste pickers collect waste from households, receptacles, streets, and landfill sites. A group of waste pickers will often divide regions among themselves and then travel the streets of their designated areas to collect waste from residential houses. The pickers then manually sort the waste into paper, plastic, metal, and glass and find retailers to purchase these materials. Often the waste pickers pay money to the person from whom they are collecting waste. Sometimes, waste is dumped at a collection point where the pickers collect it. These collection points are particularly common in apartment buildings and dwellings with multiple units.
2. **Retailers:** waste retailers include scrap traders who typically have a direct relationship with the waste pickers. While most retailers are invisible, many in Delhi and Mumbai have formed associations.
3. **Wholesalers:** wholesalers are higher in the chain of scrap trading and deal with retailers.
4. **Reprocessors:** reprocessors source scrap from both the formal and informal economies. The recyclable materials left after sorting the waste are usually used as raw materials.

Present Trends Cannot Continue

With any public policy problem it is important to consider whether intervention is required. In the case of India's informal waste economy, multiple market failures and social

factors make a case for policy intervention, specifically at an institutional level. These factors include:

- **Bias towards large corporations:** More and more, large private-sector companies are recognizing the financial viability of waste management. These enterprises tend to be capital-intensive: they require less labor and employ fewer people. At the same time, they are less efficient than the informal waste management economy.¹² Nevertheless, municipalities tend to favor private companies because they are willing and able to pay higher licensing fees, which generates revenue for the locality. This biased policymaking leads to inefficient outcomes and prevents those in the informal sector from engaging with the formal economy.
- **Slow integration of the informal sector:** Much of the integration of the informal waste sector into the formal sector has happened only within the last decade and is limited to major cities in India.¹³ Banks still do not recognize scrap trade as an economic activity, making loans inaccessible for workers. Scrap traders are therefore more vulnerable to economic shocks, which traps them in a cycle: financial exclusion leads to susceptibility to shocks, which leads to losses and low profit margins and ultimately makes paying taxes less affordable. It is difficult to integrate scrap traders into the formal economy because they do not have consistent capacity to remain there.

- **Fast-paced integration through institutional changes:** Various cases and studies suggest that institutional changes can play a major role in integrating the informal waste sector into the formal sector.^{14,15}

Thus, in order to facilitate the integration of the informal waste sector with the formal sector, institutional changes are required. I first discuss a case study for context.

The Pune Case Study

Background

Pune, a city in central India with an estimated population of 3,006,036, is an emerging metropolis. The average household size is four and a half people.

The Pune Municipal Corporation manages the collection, transportation, and disposal of waste in the city. The per capita waste generation in Pune is 326 grams per day and

the total waste collected each day by the Pune Municipal Corporation (PMC) is in the range of 1000 metric tons. All waste is deposited at a single landfill site owned by the PMC on the eastern fringe of the city. The city spends \$27 per ton on the collection, transportation, and disposal of solid waste. Solid waste management is handled by the Health Department, which employs approximately 3500 municipal workers for this purpose.

The informal waste sector in Pune

The informal sector in Pune includes itinerant waste buyers, door-to-door waste collectors, waste pickers who work at the landfills, retail and wholesale scrap traders, and informal recycling enterprises that perform intermediate waste processing. Almost half of the pickers are under thirty-five years of age. About 75 percent walk for more than five hours a day collecting and transporting garbage, and most of them are women. Pickers handle waste with their bare hands and are shunned by citizens and bullied by municipal workers. They are also prone to skin and intestinal ailments. They do not have any legislative protection, nor do they have social security. Their earnings are variable, leaving them vulnerable to poverty shocks.¹⁶

The formation of KKPKP

In 1993, a resolution to form a union was taken by 800 self-employed waste pickers at the first Convention of Waste Pickers and Itinerant Buyers. The union formed was called the Kagad Kach Patra Kashtakari Panchayat (KKPKP). Every member of the union filled out a registration form and received an identification card. At the time, it was simply a membership card that had no legal backing. Even so, the pickers reported that harassment from police and municipal workers decreased significantly once they had cards showing they belonged to an organization.

In 1995–96, debates about the waste pickers' contributions to a reduction in municipal waste handling costs and an increase in environmental conservation, recycling, and economic productivity led PMC to recognize these identity cards. The pickers were endorsed as "authorized to collect scrap." Eventually, KKPKP advocacy led to a facilities upgrade and provisions for safety equipment, uniforms, sorting space, vehicles, medical insurance, and life insur-

ance. These factors increased efficiency and the union reported that pickers were no longer seen as thieves.

The union took up several additional causes, including initiatives to discourage child labor in the waste sector in Pune and to promote education among the children of waste pickers. The union reported a subsequent 75 percent drop in the number of child waste pickers in Pune.

Analysis: Sustainability and factors for replication

The factors that contributed to the economic integration process in Pune—a combination of strategy, opportunism, resource management, and leverage—can help lay the foundation for this process elsewhere.

From 1993–95, multiple public interest lawsuits were filed against PMC accusing the company of ineffective waste management. The main complaint was that landfills were spreading over a larger area and encroaching on Pune's residential areas and should be closed. PMC cited its endorsements of the waste pickers' identity cards as evidence that it was taking steps to recover and recycle waste and reduce the amount of landfill waste. PMC's interest in endorsing KKPKP workers and helping them function effectively eliminated many of KKPKP's bureaucratic hurdles.

KKPKP was able to engage a critical mass of waste pickers in the first year it was formed, which helped the organization push its agenda in front of political representatives. From its inception, KKPKP relied heavily on data collection to inform advocacy. As a result, KKPKP partnered with international organizations like the International Labor Organization, which gave the union more political leverage.

As described in the background section, the waste pickers in Pune were a largely homogenous group—regionally, linguistically, and caste-wise. Most of them were women from lower castes and intra-state migrants. Their similarities meant they had similar aspirations, interests, and demands, which facilitated their ability to organize and, consequently, to integrate.

The union also had support from a group of influential citizen activists, municipal councilors, and media.

Overall, the Pune example shows how increased organization used the entrepreneurial abilities of waste pickers

effectively. The union not only took initiative to improve the working conditions of the workers, but also helped provide various other benefits to society by offering high-quality waste management services. None of these initiatives compromised the interests of the laborers, and this strategic approach ensured that the voices of waste workers were heard.

Enabling conditions for integration

The Pune case study shares similarities with other cases that involve the integration of the informal sector into the formal economy in India and Latin America. The following framework, adapted from the framework suggested in the Chintan report,¹⁷ describes factors found consistently among successful initiatives:

- **Voice:** Organization is a precondition to integration. The organization should be responsible for and accountable to its members, and be involved in the representation of their interests in policymaking and rule-setting institutions. For example, in Pune, the workers' decision to organize improved their collective bargaining ability and was central to the integration process.
- **Visibility:** Economic statistics and policy research play essential roles in informing policymaking. It is crucial to recognize the informal sector's contributions and the costs and benefits of its alignment with the formal sector. For example, studies that quantify the contributions of the informal waste sector, which include a reduction in waste handling costs and an increase in downstream benefits like employment generation, make a powerful argument for the continuation of such enterprises.
- **Validity:** Legal recognition is essential to make such enterprises politically feasible. This legal validity often becomes more important than economic feasibility. For instance, the waste pickers' cooperative in Bogotá, Colombia has had to seek the assistance of activist judges and lawyers to find legal ways to address the powerful political backlash to their business venture.
- **Viability:** The informal sector continues to flourish because it is financially and functionally viable. In the waste management sector, evidence suggests that the informal

system is more efficient, effective, and equitable than the exclusively private solutions offered by the formal sector.

Conclusion and Recommendations

The informal sector has proven successful in delivering many services and products more effectively and at lower costs than the formal sector. The entrepreneurialism of this sector can be harnessed more efficiently by making institutional changes and developing more thoughtful policies. The following recommendations were derived in keeping with broader goals of generating more jobs, higher incomes, and better working conditions for those employed in the informal waste sector, as well as extending legal protections to them.

- Municipalities should act as enablers and regulators for the waste economy. They should be responsible for registering waste pickers, encouraging unions, and tracking the contribution of the waste sector with metrics. For example, municipalities might track the quantity of waste handled by waste pickers versus the demand for their services. These figures would create a balanced framework for the role of the municipality and the waste economy itself, with adequate checks and balances for all stakeholders.
- Institute a tri-partite board with members from each stakeholder group: the municipal corporations, scrap traders, and waste picker unions. The board members would be responsible for representing the interests of their respective associations and arguing for the inclusion of these interests in urban policies. The board should be recognized by the city government.
- Enforce source segregation of waste and protect waste pickers' access to recyclables. Source segregation ensures efficiency by separating the dry and wet waste at or near the point of collection. The bias towards the private sector should be scrutinized in order to protect access to waste for the waste pickers.
- The government should promote investment in waste picker organizations and social enterprises. There is an important role for non-profit organizations in integration of the two sectors. By organizing workers in the informal sector, this integration process could be fast-paced. One such model is proposed in the appendix.

These recommendations are not exhaustive, but consistent and committed effort to these changes will surely help achieve the goals stated here.

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Appendix: Startup Proposal Based on the Problems Identified in this Paper

The following is an example of what a social enterprise to integrate the waste sector might look like. This proposal takes into account the issues and recommendations discussed above and describes a model that would implement some of these recommendations in the real world. This model is the result of a collaborative project among Geeta C. Goled from Yale University, Karun Jacob from the Illinois Institute of Technology, and the author.

Background: Waste, a misplaced resource

Waste is a misplaced resource because the waste generated in cities can be a good source of useful materials. For example, if wet waste is segregated and managed properly, it can be transformed into compost. The amount of waste generated per person in cities is rising with urban growth and an increase in personal consumption. Many city governments have attempted to address this issue, but such initiatives have been unsuccessful. There are also many private entities trying to address the issue. However, they are isolated from one another, working in silos, and do not consider the complete waste management chain from the point of generation to the point of disposal or treatment. In addition to the private entities and city governments, many motivated individuals who want to contribute to effective waste collection have taken action before encountering insurmountable barriers to achieving their goals.

There are many examples in developed countries of successful decentralized waste management ventures. The focus of this proposal is to adapt these successful recycling and management programs for Indian cities by altering them to suit the local conditions in each.

One solution is to create an online platform that will bring together the various entities currently working in silos. By ending this separation of duties, these groups will be able to work more efficiently. Each entity would be classified according to the service it provides, the type of waste it deals with, the region in which it operates, and its scale of operation. Collecting and providing this information will make

it easier for the parties in silos to search for and work with other entities at different stages of the waste management process. For example, a group of waste pickers could use this platform to search for a retailer that might be looking for a material they had collected. This online platform will also ensure that the value of products at all points in the process will be properly assessed. Price allocation will be more efficient if this information is transparent and players have to compete to get the best product.

The solution: The formalization of the waste management economy

With an increase in both land scarcity and transportation costs, a decentralized model of waste management is becoming increasingly feasible. In many ways, it is now the only viable alternative. Leveraging the 10 million waste pickers who already contribute informally to this decentralized model is the best way to formalize the waste management economy. This solution would bring down transaction and information costs at all levels in the waste economy and generate value for society.

A platform that connects the various stakeholders in the waste economy will make the process more transparent and efficient and will enable people who want to be part of the solution to contribute. For example, households interested in composting wet waste might not have the necessary space or expertise to do so, and might not know what to do with the compost after making it. Even households that are genuinely interested in segregating their waste and addressing the waste management problem can become demotivated. Having witnessed inefficient waste collection in the past, they do not trust that city governments will handle the waste responsibly, even if they segregate the waste as required.

The first step is to provide a mobile app to registered customers that will help them find a waste picker. To do this, we can partner with waste pickers through unions like the KKP in Pune. The mobile app will enable customers to communicate directly with waste pickers and request a pickup at any time, which will bring down transaction costs. Since the pickers will be registered, they will be part of the formal economy and function as an important and legitimate resource to customers. At the same time, this formalization will help the unions provide professional training and safety equipment to enable good working conditions for the pickers and promote efficiency.

The second step is to provide a website that will enable the pickers to sell the waste after sorting it. The website will include three waste categories: scrap (renewables), wet waste, and compost. These will be provided to registered traders, farmers, and NGOs on an auction basis. The pickers can choose to whom they want to sell materials, and establishing this website will enable waste pickers to charge

a market price for their goods. The website will charge a service fee for site maintenance.

The third and final step is to make the impact tangible. Since the whole process will be recorded, the amounts of waste handled, recycled, and composted can all be quantified and documented. These data can be expected to increase the number of motivated individuals who want to be part of the solution, progressively making the business model more and more viable while contributing to the resolution of the waste management problem in India.

The proposal has been carefully designed with the conditions and issues in major Indian cities in mind. In the first phase, which will take about three years to implement, a pilot program can be run in Pune. Pune has a major waste picker union and a booming start-up ecosystem. It also hosts various NGOs that have been working on this issue and creating awareness of the informal waste economy. Apart from this, the fact that Pune is a hub for startups and social enterprises suggests that its citizens are willing to pay for a useful service and contribute to social causes. The municipal corporation in Pune is also open to partnering with private players. Once tangible results are obtained in Pune, other Indian cities can be analyzed as potential sites for this solution. Based on current trends, we predict that an increasing number of people will involve themselves in the solution, which will grow in scope as well as scale. The solution should be implementable in all urban areas in India within ten years.

Strengths of the proposal

- Addresses the complete supply chain and provides a beginning-to-end solution.
- Ensures a realistic and tangible impact while holistically addressing the problem.
- Provides a platform to people who want to help resolve the solid waste management issues in the city by enabling them to be champions of change.
- Takes a participatory approach by working with waste pickers, NGOs, traders, suburban farmers, and local training institutes. Candidates from the surrounding villages can be employed and trained in waste handling, sorting, and composting methods.
- Adopts a collaborative model, enabling the existing system to operate more efficiently.
- Establishes waste segregation at the source, thus ensuring optimal use of resources.

The proposal will not just lead to waste reduction. It will also have a powerful impact on job creation and spread awareness about food production through the use of compost

for organic farming. This platform will ultimately improve resource conservation by using waste materials. By reducing the amount of waste going into landfills, this proposal will help manage landfills and consequently decrease the chance of disease outbreaks in communities near them. Once people begin to see these real benefits, more will become conscious of the goals and join this mission.

This proposal will ensure dignity of labor for waste pickers and integrate them into the formal economy. It will lead to the proper valuation of the waste pickers' contribution to the waste sector in India, and ultimately reduce the transaction costs of the informal sector.

Endnotes

- [1] F. Schneider, "Shadow economies around the world: what do we really know?," *European Journal of Political Economy* (2005): 598–642.
- [2] Neelkanth Mishra, Ravi Shankar et al., "India Market Strategy: India's better half: The informal economy," Asia Pacific/India Equity Research, Credit Suisse (2013).
- [3] Schneider, "Shadow economies around the world: what do we really know?"
- [4] Mishra et al., "India Market Strategy: India's better half: The informal economy."
- [5] C. P. Chandrasekhar, "India's informal economy," *The Hindu*, September 3, 2014.
- [6] Schneider, "Shadow economies around the world: what do we really know?"
- [7] Mishra et al., "India Market Strategy: India's better half: The informal economy."
- [8] Chandrasekhar, "India's informal economy."
- [9] Schneider, "Shadow economies around the world: what do we really know?"
- [10] M. A. Chen, "Urban Employment in India: Trends and Trajectories," Inclusive Cities in India Workshop, New Delhi June 7-8, 2011.
- [11] Schneider, "Shadow economies around the world: what do we really know?"
- [12] B. Chaturvedi, "Recycling Livelihoods: Integration of informal recycling sector in solid waste management in India," Chintan Environmental Research and Action Group.
- [13] *Ibid.*
- [14] *Ibid.*
- [15] Chen, "Urban Employment in India: Trends and Trajectories."
- [16] Chaturvedi, "Recycling Livelihoods: Integration of informal recycling sector in solid waste management in India."
- [17] *Ibid.*

THE CASE FOR EASING PATENT RESTRICTIONS IN INDIA AND OTHER MIDDLE-INCOME COUNTRIES

Samina Hossain

Edited by Sasha Feldstein

India's first compulsory license for drug production was awarded to Natco Pharma Co. in July 2014. The decision allowed the Indian company to manufacture a generic version of Bayer's oncology drug Nexavar, which treats liver and kidney cancer, and made this life-saving medication accessible to India's vast low-income population by drastically reducing its price. However, more recent court decisions in January 2015 suggest that the future of India's generics industry is uncertain in the face of immense pressure from brand multinational companies. Using Bayer's case against Natco as an example, this article argues that the campaign to impede generic drug manufacturing, specifically oncology products, is inconsistent with the international rules on trade set out by the World Trade Organization, and makes recommendations for the future of the generic drug industry in India.

On July 15, 2014, the Bombay High Court upheld the decision of India's patent authority, the Intellectual Property Appeals Board, to award the country's first compulsory license. Natco Pharma Co. would now be allowed to manufacture an affordable generic version of Bayer's oncology drug Nexavar (sorafenib tosylate), thus ending Bayer's exclusive right to produce the medication. This decision brought the price—originally about \$5,000 for a month's supply—down by 97 percent to roughly \$175.¹ Natco must pay Bayer royalties and is prohibited from exporting the drug. However, the dramatic reduction in price put a life-saving cancer medicine within the reach of India's vast low-income population. A year's supply of Nexavar at Bayer's price would have been more than forty times India's average per capita income in 2012.²

The fight over Nexavar marked the beginning of a campaign by multinational companies to obstruct the production of generic drugs in India. Recent decisions made in January 2015—in which the United States Supreme Court and the Delhi High Court ruled in favor of multinational companies

Teva and Novartis, respectively—suggest dim prospects for India's generics industry.³ As a middle-income nation, India is especially vulnerable to these setbacks because it does not have the capabilities for cutting-edge research and is not exempt from offering patent protection like many least developed countries (LDCs). Therefore, it is both unable to produce medications of its own and is financially prohibited from purchasing patent-protected drugs from the United States. This article uses the example of Bayer's case against Natco to argue that the campaign to obstruct generic drug manufacturing is inconsistent with the international rules on trade set out by the World Trade Organization (WTO).

Background

The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) is an international agreement that was established by the WTO during the Uruguay Round in 1994. It sets down minimum levels of protection that each government must provide to the intellectual property of WTO members. The agreement attempts to strike a balance

between the goals of promoting innovation and ensuring social and economic welfare. According to TRIPS, governments can issue compulsory licenses that allow a competitor to produce a patented product without the patent owner's consent in order to prevent intellectual property rights abuses such as failing to supply the product on the market. However, patent-holders still own the rights to the drug and receive payment for its use through royalties. Additionally, to safeguard the legitimate interests of the patent-holder, compulsory licenses can only be invoked under certain conditions. For example, Article 31 of TRIPS states that countries must first try to negotiate a voluntary license with the patent holder. On the other hand, this prerequisite can be waived for "circumstances of extreme urgency," "public non-commercial use," and anti-competitive practices. In recent years, the TRIPS flexibility on compulsory licensing has been tested in poor countries where access to drugs can conflict with the role that patents play in incentivizing innovation in medicine.

WTO members signed on to TRIPS in 1994 but public health provisions were not incorporated until the 2001 Doha Declaration, which came at the heels of widespread concerns about HIV/AIDS. The Doha Declaration affirmed that TRIPS "can and should be interpreted and implemented in a manner supportive of WTO members' right to protect public health and, in particular, to promote access to medicines for all." The power to grant compulsory licenses was added to TRIPS at this time. The Agreement defers significant authority to the governments: "Each member has the right to grant compulsory licenses and the freedom to determine the grounds upon which such licenses are granted."⁴

As a result, much of the focus of this case is now on the Indian courts. India's regulation on compulsory licensing is embedded in section 84 of India's Patents Act. Under India's laws, compulsory licenses can be awarded if, after three years from the date of the grant of patent, the patented product is not meeting the public need, not available locally at an affordable price, or not "worked in" or manufactured inside India. On July 15, 2014, the Indian courts decided that Bayer's Nexavar fulfilled these criteria and therefore granted Natco's request for a compulsory license to produce generic versions. The example of Nexavar—the first time in the history of the Indian Patents Act of 1970 that the provi-

sion for compulsory licenses was invoked—represents a compelling argument for the easing of patent restrictions in similar cases in middle-income countries like India.

Too Rigid for Developing Countries

In the late 1990s, the HIV/AIDS crisis demonstrated the need for compulsory licenses to address the health challenges of developing countries. At the time, the growth rate of HIV/AIDS in developing countries, particularly sub-Saharan Africa, was even more alarming than it was in Europe and the United States. Pharmaceutical companies developed life-saving antiretroviral (ARV) medicines with

Pharmaceutical companies continue to invoke patent protection as a defense to retain their monopolies. With little oversight, these companies have received concessions from governments . . . Such rigid patent laws have effectively infantilized the pharmaceutical industry.

consistent pricing in the West and in Africa. The pricing was burdensome on the African population not only because of the region's poverty but also because many nations lacked health insurance systems that would cover part of the drug costs. In South Africa, for example, only about 10,000 of the nearly four million victims of HIV/AIDS had access to treatment.⁵ Public pressure to import generics increased, but the ARV drug companies feared a domino effect that would undercut sales elsewhere and so continued to defend their patent rights under TRIPS. Angered by the pharmaceutical companies' insistence on strong patent protection, activists in South Africa launched an aggressive and highly publicized campaign against drug manufacturers, which elicited a dramatic international response and the eventual enactment of a law permitting the import of cheaper generics like India's Cipla. Cipla, a generic ARV, was key to subsidizing AIDS treatment in South Africa. The South Africa experience first brought to light the tension between patent protection and public health concerns in developing countries.⁶

Today, pharmaceutical companies continue to invoke patent protection as a defense to retain their monopolies. With little oversight, these companies have received concessions from governments on the basis of claims around cost. Such rigid patent laws have effectively “infantilized the pharmaceutical industry.”⁷ Additionally, pharmaceutical companies are able to maintain market dominance through “ever-greening,” a process by which companies introduce drug modifications that provide little change in efficacy simply in order to secure a new patent. In some cases, large companies also pay generic manufacturers to delay market entry.⁸ These anti-competitive practices underscore the need for further regulations through patent restrictions such as compulsory licensing.

Developing countries like India, which are keen on trade openings and foreign direct investment, face immense pressure to refrain from issuing compulsory licenses from countries that back large drug companies. The United States, for example, is pushing for regional trade agreements including the Trans-Pacific Partnership (TPP) that, according to leaked drafts of the U.S. negotiating position on TPP,⁹ may include far more stringent patent regulations than those in TRIPS. Although the TPP has yet to be finalized, it has the potential to undermine the WTO framework and its development aims. It should also be noted that, in the above case of South Africa, the United States had threatened trade sanctions for permitting imports of generic copies of ARVs. Because of these pressures, some countries seeking foreign direct investment—including China and several TRIPS members—avoid invoking compulsory licenses for fear of damaging trade relations. By contrast, the Indian government’s decision to invoke Natco’s compulsory license will help renew confidence in the WTO and limit the influence of large pharmaceutical companies. However, it should be noted that the Indian patent law’s provision for compulsory licenses included several safeguards for Bayer, including royalty payments and restrictions on the export of locally-produced generics.

A Disproportionate Effect on Middle-Income Countries

Approximately 80 percent of the low-income population in India pays out-of-pocket for all medical expenses, and the

exorbitant cost of branded drugs forces families to make immense personal sacrifices.¹⁰ As India moves toward universal healthcare coverage to ameliorate these problems, the availability of cheaper generics will be crucial given the government’s budget constraints. The Modi government plans to roll out a universal healthcare plan that is expected to cost \$26 billion between 2015 and 2019.¹¹ The current resistance to compulsory licensing makes it hard for India to deliver universal healthcare and goes against the WTO’s mandate that “the TRIPS Agreement does not and should not prevent members from taking measures to protect public health.”¹² The pushback against compulsory licenses will compel India to forgo the coverage of patented drugs under its health plan. If patented drugs are not covered, the burden of paying out-of-pocket will be passed on to India’s poorer population, effectively barring low-income access to treatment. It is also telling that a wealthier nation like the United Kingdom declined to cover Nexavar under its national health plan, citing the high costs.

Bayer claims that India’s drug access problem is due to inadequate healthcare services, not patents. India’s healthcare

The Modi government plans to roll out a universal healthcare plan that is expected to cost \$26 billion between 2015 and 2019. The current resistance to compulsory licensing makes it hard for India to deliver universal healthcare If patented drugs are not covered, the burden of paying out-of-pocket will be passed on to India’s poorer population, effectively barring low-income access to treatment.

system does need improvement and the country is working toward universal coverage, but this huge task does not have to be accomplished before generics can be made available—especially when alternative treatments do not exist. Another criticism is that compulsory licensing will discourage foreign investment in India. In the case of Bayer, the compulsory license is likely to have little impact on the company because so little Nexavar was previously sold in India and very little

investment was made within Indian territory to begin with. It is for this reason that Nexavar did not satisfy the local working requirement under India's patent law. Second, capital flight from emerging markets like India is unlikely in the long run given that these markets are expected to account for 30 percent of global spending in 2016.¹³ The compulsory license therefore does not discourage foreign investment but rather exerts pressure on large companies to take local affordability into consideration.

Granting compulsory licenses to India's local industry has global implications. India's generics are far more affordable for the world's least developed countries than are branded drugs. This high volume, low cost approach explains India's booming export market, which is estimated to be \$11 billion and to grow by 20–25 percent per year.¹⁴ Consequently, India is also the drug supplier of international NGOs like UNICEF. Pharmaceutical companies cite other means to produce medicines for LDCs such as voluntary licenses, but these schemes rely on political whims and allow the drug company to retain complete control over the price. For example, the decision of California-based pharmaceutical giant Gilead to issue a voluntary license for the hepatitis C drug Sovaldi was not fully embraced because the scheme left out several middle-income countries where it wished to charge brand prices. Undoubtedly, unrestricted generic competition will yield far lower prices than restricted voluntary licensing. Thus, higher patent protection and the restriction of compulsory licenses will harm India as well as the Global South.

Proponents of patent protection claim that the real motive behind India's fight for compulsory licenses is not to ensure drug access but to prop up its generics industry. Yet it can be argued the industry itself fulfills a critical role in helping Indian consumers gain access to certain medicines. The Indian market was not Bayer's priority when producing Nexavar; Bayer CEO Marijn Dekkers, at a *Financial Times* conference on December 3, 2013, stated, "We developed this product for Western patients who can afford this product, quite honestly."¹⁵ Under such circumstances, operation of the generics industry in non-Western societies like India is necessary to satisfy an unmet demand for medicines. Besides, Indian drug companies are not only imitating drugs but also pioneering new treatments such as the fixed-

dose combination of ARVs. Their low-cost manufacturing brought down the price of ARVs from \$10,000 a year in 2000 to \$150 today.¹⁶

Given the capabilities of the Indian generics industry and the absence of low-cost alternatives for its poor population, the Indian government perceives monopolistic drug companies as an obstacle to the growth of its own industries. Moreover, India and other middle-income countries face a patent regime that developed countries did not have to face in the twentieth century. Arguably, the history of the patent system reveals that it was built according to the special requirements of industries from the developed world. For example, Switzerland introduced a patent to protect its watch industry, but initially withheld patent protection on chemical processes because the chemical industry relied on the copying of German technology.¹⁷ Developing countries do not enjoy this leverage today because the TRIPS Agreement prescribes minimum standards of protection derived from the regulations of developed countries. This is one reason the Indian Patent Law requires foreign drug companies to manufacture their products locally to some extent—the "worked in" condition—to encourage transfer of technology. On the surface level the "worked in" condition feeds into the concerns about using compulsory licenses to prop up the local industry. But from a cumulative historical perspective, these flexibilities are a mechanism to ensure fair competition. Thus, current patent rules are preventing developing countries like India from building a strong pharmaceutical industry that can contribute to economic development and tougher competition in the future—a goal that is in keeping with WTO aims.

Non-Communicable Diseases Are A National Emergency

Non-communicable diseases (NCDs) like cancer are not infectious like AIDS, but they are pervasive, fatal, and concentrated in developing countries. According to the World Health Organization, 70 percent of deaths from NCDs now occur in low- and middle-income countries, up from 40 percent in 1990. Moreover, cancer is ranked among the top four causes of death in ten out of eleven key emerging countries.¹⁸ The alarming rise in cancer-related deaths led to the 2011 *UN Political Declaration on the Prevention and*

Control of NCDs and in 2012, the World Health Assembly set the goal of a 25 percent reduction in preventable NCD deaths by 2025.

Despite international concern about the threat of NCDs, pharmaceutical companies insist that this class of diseases does not satisfy the compulsory license criteria for national emergencies. The TRIPS Agreement itself states:

Each member has the right to determine what constitutes a national emergency or other circumstances of extreme urgency, it being understood that public health crises, including those relating to HIV/AIDS, tuberculosis, malaria and other epidemics, can represent a national emergency or other circumstances of extreme urgency.¹⁹

The law allows the Indian courts to decide which diseases count as a “national emergency.” In India, NCDs like cancer account for 60 percent of deaths,²⁰ which is arguably a national emergency. Moreover, NCDs may be affecting India’s economic growth. A World Bank study showed that the estimated GDP of India in 2004 would have been 4–10 percent higher if NCDs had been completely eliminated.²¹ Public health crises must be understood in the context of time and place: given the current prevalence of cancer as a leading cause of death in India, alongside other NCDs like heart disease and diabetes, it deserves the status of “national emergency,” especially when it affects economic performance.²²

International law scholar Frederick Abbott suggests that the pharmaceutical industry’s argument that only rapidly spreading and infectious diseases constitute national emergencies is not corroborated by the law: “The belief appears to be that if you say it enough, particularly in the media, it will become true.”²³ His words are consistent with reports about the conflict that had arisen between two factions of the UN General Assembly during a high-level meeting on NCDs on September 19–20, 2011. The purpose of the meeting was to agree on commitments for the control and prevention of NCDs worldwide in a resolution titled *Political Declaration*. Developing countries lobbied to include TRIPS in the Declaration to ensure that intellectual property trade rules would apply to this new area of public health, but the United States and the European Union led a counter-effort to protect their large pharmaceutical industries from such a loose interpretation of TRIPS. The same backers of the pharmaceutical industry continue to campaign for strict

interpretation, yet NCD drugs like Nexavar deserve recognition under this agreement.

Pharmaceutical Costs are Not Transparent

For half a century, the pharmaceutical industry has justified the exorbitant prices of its products with claims of high costs and risks associated with research and development (R&D). Patents allow the innovator to recover these sunk costs by protecting the intellectual property from competition and thus provide an incentive to invest in medicines that otherwise would not have even existed. It is undoubtedly an expensive enterprise to work through the various trial stages of making an approvable drug. However, oversight of this process is inadequate and details of R&D costs are rarely divulged to the public. Bayer claims to have spent \$2.5 billion between 1999 and 2005 for the initial stages of the development of Nexavar, but this claim is more than \$1 billion above estimates from various studies,^{24,25} which themselves are sometimes funded by the pharmaceutical industry.^{26,27}

Estimates of the true cost of developing Nexavar shrink significantly given the following information from consumer advocate James Love: 1) Bayer split its R&D costs with Onyx Pharmaceuticals, 2) Bayer’s expenses on the development of Nexavar included research on several other compounds, and 3) Nexavar benefited from the Orphan Drug Tax Credit, support from the U.S. federal government that subsidizes half the cost of qualifying trials. Orphan drug status carries lower regulatory requirements and is assigned to drugs for rare diseases. According to Love, the true R&D cost of developing Nexavar may be a little more than a quarter of the current global sales of the drug.²⁸ This figure is corroborated by claims that pharmaceutical industry profits typically amount to between one-quarter and one-half of company revenues.²⁹

While the above analysis is speculative, both the multiple studies that have produced estimates far below Bayer’s \$2.5 billion figure and the fact that Bayer has refused to disclose cost outlays—as other pharmaceutical companies such as Onyx have done—cast doubt on claims about the extent to which compulsory licenses actually affect R&D costs. Due

to the lack of oversight, especially by independent institutions, there is no way to know the true costs of Bayer's research and development.

If research and development costs are indeed high, there are other possible models to recover those costs and at the same time improve access to drugs in low-income nations. These alternatives include innovative public-private partnerships, "patent pools," and differential pricing. For example, Glaxo-Smith Kline instituted a tiered pricing model for its products in India that makes drugs on average 25–40 percent cheaper than they are in advanced markets.³⁰ This marketing strategy has allowed Glaxo-Smith Kline to thrive in India and avoid the need for compulsory licenses. Likewise, the drug company Roche contracted the manufacturing of its drugs to a local generic company to reduce prices, partly in response to losing a patent dispute with Cipla in the Indian courts. In all of these examples, legal systems were key to compelling companies to make drugs more affordable.

Conclusion

Brand drug manufacturers are excessively protectionist, ignore the needs of middle-income nations like India, deny the emergency status of NCDs like cancer, and exaggerate R&D costs. As a result, the aim of the TRIPS Agreement to balance patent protection with the goals of public health has not been realized. The recent court rulings in favor of the drug companies are worrisome. It remains to be seen how Narendra Modi's mission to prop up India's industries through the highly-touted "Make in India" campaign might help reverse these trends. The regulation of life-saving drugs must shift away from case-by-case court decisions and toward stable public policies that ensure drug accessibility without hindering innovation. The UN platform is likely the best launch pad for a new wave of reforms, because it has yielded international guidelines like the TRIPS Agreement. However, this agreement defers considerable discretionary and enforcement power to the member countries, and even this flexibility is undermined by bilateral agreements among wealthier countries trying to circumvent the multilateral regime. Moreover, these flexibilities pit the patent authorities of developing countries against large pharmaceutical companies in contentious patent battles, wasting the time and resources of both parties. The accumulated experience

of developing countries like India can help to reinvigorate international efforts to amend the TRIPS guidelines such that more attention is given to the human side of drug production and distribution. Indeed, the guidelines must be amended and enforced to ensure that low-income communities in developing countries have access to life-saving treatments.

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Endnotes

- [1] Rupali Mukherjee, "Govt uses special powers to slash cancer drug price by 97%," *The Times of India*, March 13, 2012, <http://timesofindia.indiatimes.com/india/Govt-uses-special-powers-to-slash-cancer-drug-price-by-97/articleshow/12240143.cms>
- [2] Mukherjee, "Govt uses special powers to slash cancer drug price by 97%."
- [3] E.J. Lane, "U.S. Supreme Court ruling on Copaxone triggers questions in generics-minded India," *FiercePharma*, January 22, 2015, <http://www.fiercepharma.com/story/us-supreme-court-ruling-copaxone-triggers-questions-generics-minded-india/2015-01-22>
- [4] World Trade Organization, "Declaration on the TRIPS agreement and public health," November 14, 2001.
- [5] J.D. Sachs, "A new global commitment to disease control in Africa," *Nature Medicine* 7 (2001): 521–523 doi:10.1038/87830.
- [6] William W. Fisher III and Cyril P. Rigamonti, "The South Africa AIDS Controversy: A Case Study in Patent Law and Policy," *Patent Law and Policy* (2005) 12-13/1.
- [7] Thambisetty Sivaramjani, "Compulsory Licenses for pharmaceuticals: An inconvenient truth?" LSE in India, March 25, 2013, <http://blogs.lse.ac.uk/indiaatlse/2013/03/25/compulsory-licenses-for-pharmaceuticals/>
- [8] IHS "US Federal Appeals Court Renews Pay-for-Delay Suit over K-Dur," July 17, 2012, <http://www.ih.com/products/global-insight/industry-economic-report.aspx?id=1065969607>
- [9] Wikileaks, "Secret TPP treaty: Intellectual Property Chapter working document for all 12 nations with negotiating positions," October 16, 2014, <https://www.wikileaks.org/tpp-ip2/tpp-ip2-chapter.pdf>
- [10] Oxfam, "Hearing Statement by Rohit Malpani, Senior Policy Advisor of Oxfam America, For the United States Trade Representative Public Hearing," *2011 Special 301 Review*, <http://infojustice.org/wp-content/uploads/2011/02/Oxfam-America.pdf>
- [11] Katrina Hamlin, "Modicare may add to Big Pharma's Indian gripes," *Reuters*, January 22, 2015.
- [12] World Trade Organization, "Declaration on the TRIPS agreement and public health."
- [13] IMS Institute for Healthcare Informatics, "The Global Use of Medicines: Outlook Through 2016," *IMS Health*, <http://apps.who.int/medicinedocs/en/d/Js20306en/>
- [14] Piedmont Intellectual Property, "Compulsory License Conundrum," <http://www.pipnclaw.com/index.php/blog2/blog/compulsory-license-conundrum/>

- [15] Ketaki Gokhale, “Merck to Bristol-Myers Face Threats on India Patents,” *Bloomberg News*, January 28, 2014, <http://www.businessweek.com/news/2014-01-21/merck-to-bristol-myers-face-more-threats-on-india-drug-patents>
- [16] Oxfam, “Hearing Statement by Rohit Malpani, Senior Policy Advisor of Oxfam America, For the United States Trade Representative Public Hearing.”
- [17] E. Kaufer, *The Economics of the Patent System* (Harwood Academic Publishers, New York: 1989), 25–30.
- [18] IMS, “Securing IP and Access to Medicine: Is Oncology the Next HIV?” *IMS Consulting Group*, 2013.
- [19] World Trade Organization, “Declaration on the TRIPS agreement and public health.”
- [20] World Health Organization, “India,” *Noncommunicable Diseases (NCD) Country Profiles*, 2014. http://www.who.int/nmh/countries/ind_en.pdf
- [21] A. Mahal, A. Karan, M. Engelgau, “The Economic Implications of Non-Communicable Disease for India,” *The World Bank*, 2010.
- [22] Kalpa Sharma, “Burden of non communicable diseases in India: Setting priority for action,” *International Journal of Medical Science and Public Health* 2.1 (2013), 7-11, doi:10.5455/ijmsph.2013.2.7-11.
- [23] Frederick Abbott, “Essential Meds, Patents & NCDs: Abbott Explains,” Interview by Ed Silverman, *KEI*, September 23rd, 2011.
- [24] J. Mestre-Ferrandiz, J. Sussex, and A. Towse, “The R&D Cost of a New Medicine,” Monograph in *Office of Health Economics*, December 2012, <https://www.ohe.org/publications/rd-cost-new-medicine>
- [25] Joseph A. DiMasi, Ronald W. Hansen, and Henry G. Grabowski, “The price of innovation: New Estimates of Drug Development Costs,” *Journal of Health Economics* 22 (2003): 151–185.
- [26] Timothy Noah, “The Make-Believe Billion,” *Slate Magazine*, March 3, 2011.
- [27] James Love, “IPAB hearing on the Nexavar compulsory license, part 1, R&D costs,” *James Loves’ Blog on KEI*, January 19, 2013, <http://keionline.org/node/164>
- [28] *Ibid.*
- [29] Noah, “The Make-Believe Billion.”
- [30] Tracy Staton, “New Indian price caps would raise another hurdle to Big Pharma,” *Fierce Pharma*, September 6, 2012, <http://www.fiercepharma.com/story/new-indian-price-caps-would-raise-another-hurdle-big-pharma/2012-09-06>

COMPETITION EFFECTS ON EDUCATIONAL OUTCOMES: ADDRESSING THE MODIFIABLE AREA UNIT PROBLEM. EVIDENCE FOR CHILE

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Edited by Linden Bairey

The potential effect of competition on school performance has been widely debated in the United States and abroad, and an important body of academic research has been generated around this question. However, these studies almost universally use measures of competition that are determined by administrative boundaries, which is not necessarily a good representation of the real competition that a school faces. This measure could potentially include schools that do not represent real competition and exclude ones that do, which may generate measurement error in the competition data and therefore an attenuation bias. To address this issue, known as the modifiable area unit problem, this paper measures competition using geographical proximity instead of administrative boundaries. The effect of competition on fourth grade test scores in Chile is estimated using a difference in differences approach. Results show that competition has a positive effect on subsidized private schools and a negative one on public schools, likely because of their different incentive structures. The relevant competition for a school appears to be other schools within a distance of, at maximum, six kilometers.

1. Introduction

Whether competition among schools is desirable is the subject of much debate, and researchers from multiple disciplines argue both in favor of and against it. The former allude not only to the benefit of allowing parents to choose among different educational programs, but also to the positive effect that competition has on school quality,² which encourages under-performing schools to improve or risk losing their students. Meanwhile, critics argue that school competition may increase the segregation of high-achieving and low-achieving students, which may make it more difficult for the latter to improve performance.

The effect of competition on school performance is similarly contested. It is possible to find evidence that suggests a positive effect in both the United States and abroad.^{3,4,5,6}

But other studies have failed to find any significant positive effect of competition on performance.^{7,8}

Regardless of their conclusions, nearly all of the research I have encountered measures a school's level of competition using the characteristics of other schools in its same administrative unit. In the United States and Chile, these units are census tracts and *municipalidades*, respectively. This methodology creates what is known as the modifiable area unit problem (MAUP): the results obtained depend on the definition of the boundaries of the administrative unit. This problem generates an attenuation bias, which will be explained in section 3 of this article. To avoid the MAUP, I estimate the effect of competition on the performance of fourth grade students in Chilean urban schools using data

on a school's individual geographic location rather than its administrative boundaries.

The results indicate that a school's relevant competitors are other schools within a distance of, at maximum, six kilometers (3.75 miles), regardless of administrative boundaries. The difference in differences estimation shows that competition generates a systemic effect on both Spanish and math scores when it is measured using the characteristics of all schools within a distance of approximately six kilometers. However, some of the results are only marginally significant. Interestingly, these competition effects are shown to be negative for public schools and positive for private subsidized schools.

The article proceeds as follows. Section 2 presents a brief description of the Chilean education system. Section 3 describes the modifiable area unit problem and how it biases the estimation of competition. Section 4 presents a description of the identification strategy, and section 5 gives a description of the data. Section 6 presents the main results. Section 7 concludes.

2. The Chilean Education System

In Chile, families can choose the schools their children attend, and school fees are paid with vouchers received directly from the government based on student attendance. There are no spatial or administrative restraints on school choice: families can select a school regardless of its geographic location or administrative unit. This system was created through education organization and financing reforms in 1980, which decentralized public school administration and passed that responsibility to local governments. These reforms also introduced a flat per-student voucher system, in which a school receives money based on the number of days a student attends school each month. Both public and private schools receive these vouchers, and the amount of funding depends on the school's geographic location and the level of education it offers.

There are three types of schools in Chile: public schools that depend on direct funding from the local government (*municipalidad*), subsidized private schools that accept government vouchers and can also charge tuition fees, and unsubsidized private schools that do not accept vouchers

and as a result charge significantly higher fees. Although subsidized private schools can charge fees, the value of the government voucher decreases with an increase in the fee, and as a result about 60 percent of these schools do not charge any fees to the families. Given the large cost difference between attending an unsubsidized private school and attending either of the two alternatives, I exclude the former from the analysis. For simplicity, I will refer to subsidized private schools only as private schools.

In Chile most public school teachers and staff are employees of the *municipalidad*, and a special statute for public servants regulates their employment. The employment of private school teachers, in contrast, is governed by the common labor laws. This difference between public and private schools has been widely studied⁹ and generates an important disparity in incentives for public and private school teachers. For example, the probability of receiving a raise for good student performance or of being fired for bad performance is higher in private schools than in public schools, because it is more difficult to fire public school employees of the *municipalidad*. These disparate employment regulations and teacher incentives affect school performance.

3. The Modifiable Area Unit Problem and the Estimation Bias

The MAUP is the possibility of obtaining different results of an analysis of the same data in a given geographic area when different boundary systems are used. In "Measures of Spatial Segregation," Reardon and O'Sullivan explain that the MAUP "arises in residential segregation measurement because residential population data are typically collected, aggregated, and reported for spatial units (such as census tracts) that have no necessary correspondence with meaningful social/spatial divisions."¹⁰

In this section I will not focus on the problem that arises from the different boundary systems, but rather on how estimations are biased by the imposition of artificial boundaries that do not necessarily reflect the relevant competition of a school. As a theoretical exercise, suppose we have a geographic area with four different administrative units, as shown in figure 1, and we want to measure the relevant competition of the school called School A, whose location is specified in figure 1.

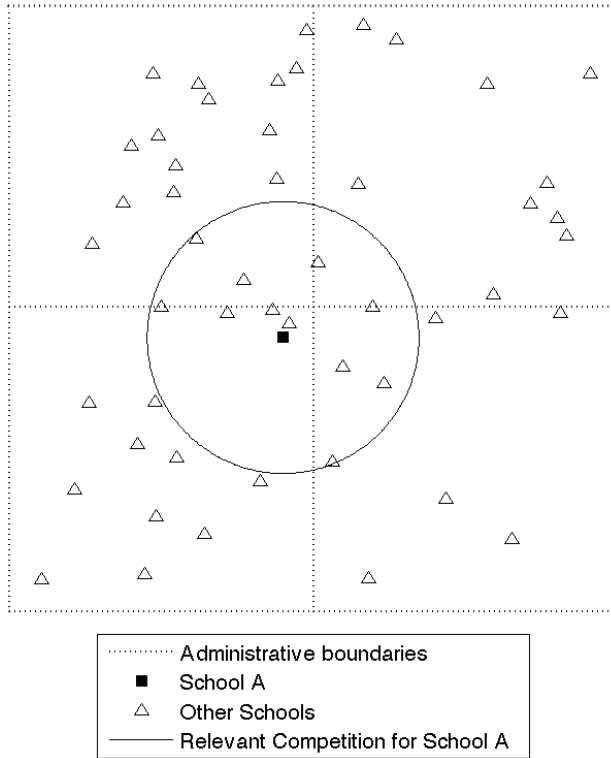


Figure 1: MAUP example

Suppose the relevant competition for School A is not the schools within the same administrative boundary but the schools that are spatially close. If we use only the schools located in the same administrative unit to measure the level of competition that School A faces, some schools that are real competitors—the ones inside the true competition circle but outside the lower-left administrative square—are excluded. Other schools that are not real competitors—those outside the competition circle but inside the lower-left square—are nevertheless included. We cannot say whether the level of competition is higher or lower when measured within the administrative boundaries or when measured against schools that are competitors as defined by this geographic model. However, it is clear that the use of administrative boundaries adds noise to the measurement.

The noise included in the measure of the competition level will affect the estimation of the effect of this variable on the school’s performance. Specifically, it will generate an attenuation bias. Suppose that the real model is

$$y_i = \alpha + \beta x_i + \gamma C_i + \varepsilon_i$$

where y_i represents the performance of the school i , C_i is the level of competition that the school faces, x_i refers to other

explanatory variables, and ε_i is the unexplained portion of the model. Because of the MAUP, the measurement of C_i is imperfect, so suppose that instead of C_i we can observe $C_i^* = C_i + \eta_i$, where η_i is white noise, i.e. $E[\eta_i] = 0$, $V[\eta_i] = \sigma_\eta^2$, $E[x_i \eta_i] = 0$, and $E[C_i \eta_i] = 0$. In this case, we can rewrite y_i as

$$y_i = \alpha + \beta x_i + \gamma C_i^* - \gamma \eta_i + \varepsilon_i$$

The estimators of γ and its probability limit, using C_i as a measure of competition, are

$$\hat{\gamma}^* = \gamma + \frac{\text{cov}(C_i^*, -\gamma \eta_i)}{V[C_i^*]}$$

$$\hat{\gamma}^* \xrightarrow{p} \gamma \left(1 - \frac{\sigma_\eta^2}{\sigma_\eta^2 + \sigma_c^2} \right) \neq \gamma$$

where $\sigma_c^2 = V[C_i]$. The right-side term inside the parentheses is known as the attenuation bias, and biases the estimation towards zero.

4. Identification Strategy

To address the MAUP, I use geo-referenced school-level data—latitude and longitude for every school—and construct a measure of the competition that a school faces by looking at the characteristics of schools that are located within a certain surrounding geographic radius. An average Chilean student travels 2.57 kilometers to public school and 2.78 kilometers to private school,¹¹ so it is unlikely that the relevant radius of competition will be much greater than twice that distance. Therefore, in the estimation, I use radii ranging from one-half to ten kilometers (0.3 to 6.2 miles), with steps of one half-kilometer, and compare the results.

The expected results of the competition effect will depend on the radius used. If the radius is too small and there is an actual effect, the measured effect should be small, because the observed competition does not include all the relevant schools. At the other extreme, if the radius is too large, the measured effect should be zero because the observed competition includes schools that are not part of the true competition. Therefore, if there is a real effect, I expect that it appears not for every one of the estimations, but only for the ones whose radius describes the real competition.

I estimate the effect of competition by specifying a difference in differences estimation, where the scores obtained by

the schools are specified as:

$$y_{i,t} = \alpha + \beta x_{i,t} + \gamma C_{i,t}^{\delta} + \eta C_{i,t}^{\delta} D_i + \omega_i + u_t + \varepsilon_{i,t}$$

where $y_{i,t}$ is the test score of the school i during the year t and $x_{i,t}$ refers to the characteristics of school i , some of which vary according to the subject of the test. $C_{i,t}^{\delta}$ is the level of competition that the school i faces in year t from all the schools within a δ kilometer radius, where $\delta = \{1/2, 1, 3/2, \dots, 19/2, 10\}$. D_i is a dummy variable that takes the value of one if the school is private and zero otherwise. Therefore, the competition effect will be γ for public schools and $\gamma + \eta$ for private schools. Finally, school level and time fixed effects are defined as ω_i and u_t , respectively, and $\varepsilon_{i,t}$ is the residual. Estimations are calculated separately for Spanish and math tests.

One problem with this specification is the potential endogeneity of the variable $C_{i,t}^{\delta}$. This endogeneity can be explained mainly by two factors: 1) unobserved characteristics of the administrative unit that affect both competition and test scores, and 2) the fact that expectations about present scores can affect school enrollment strategies, so the level of competition (which is mostly defined at the beginning of the academic year) could be caused by the expectations of the scores, even though the tests are taken after the beginning of the academic year. To address the first potential endogeneity, I add a fixed effect for every *municipalidad*, fixed effects for the political terms of their elected officials,¹² and the interaction between them. For the second endogeneity possibility, I use the lagged value of the measure of competition as an instrument of the present value, avoiding the possibility of reverse causality.

5. Data

I use data from fourth-grade math and Spanish test scores of all urban schools in Chile from 2005 to 2012. This information is available on the website of the Chilean Ministry of Education (*Ministerio de Educación*),¹³ and includes the socio-economic category of the school,¹⁴ whether it is public, subsidized private, or unsubsidized private, and the number of students tested. Test scores are normalized to have a mean of zero and a standard deviation of one in year 2005. I also use the latitude and longitude of each school to specify its location.

Given their high prices, the market for private schools seems to be isolated from the rest of the schools; private schools are therefore excluded from the dataset. I also exclude rural schools because of their lack of competition, which can be inferred from their inefficiently low level of students.¹⁵

In 2008 the *Ley de Subvención Escolar Preferencial* (Preferential Student Subsidy Law) modified the voucher system and allocated significantly more resources to schools with the poorest students, which affected the school market.¹⁶ To avoid any possible bias from this change, I only include data from 2008 onwards in my estimations. However, past data on test scores and competition are added as instruments, as explained in the previous section. Finally, I exclude schools that opened after 2004 because at the time of the observation these schools could have been in periods of adjustment, which would add noise to the estimations.

The level of competition $C_{i,t}^{\delta}$ is measured through the Herfindahl index of student share, taking all the schools within a radius of δ kilometers. The Herfindahl index is a measure of market concentration defined as the sum of squares of the market shares. In other words, if there are n schools and every one has a market share of students s_i , the Herfindahl index is

$$\sum_{i=1}^n (s_i)^2$$

A larger Herfindahl index means a higher market concentration, and therefore a lower level of competition.

The variables added as covariates, in addition to $C_{i,t}^{\delta}$ and $C_{i,t}^{\delta} D_i$, are: the number of students in a class, a dummy variable indicating whether the school is private, four dummy variables indicating socioeconomic group, and the fixed effects mentioned in the previous section. The instrument for $C_{i,t}^{\delta}$ (and therefore for $C_{i,t}^{\delta} D_i$) is also explained in the previous section.

6. Results

Figure 2 presents the results of the estimated effects of competition using Spanish test scores as the independent variable, and figure 3 presents the estimations of these effects using math test scores. In each figure, the upper graph is the effect on public schools and the lower one is the effect on private schools.

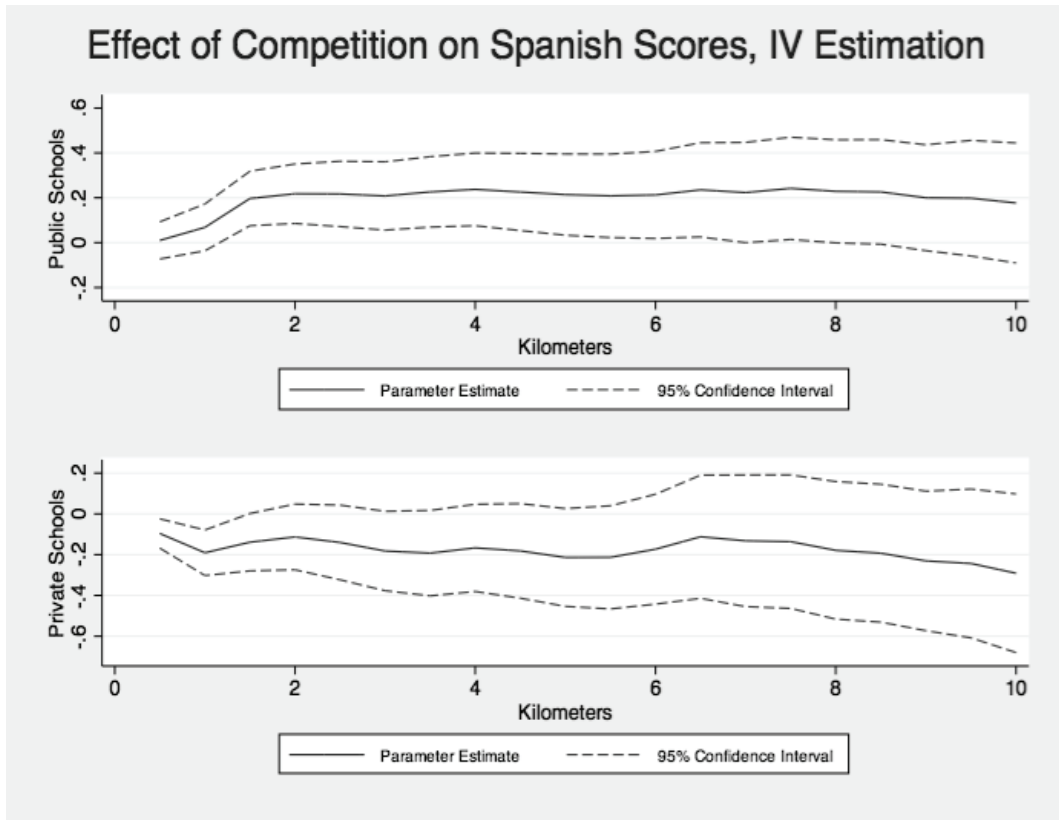


Figure 2: Spanish test scores

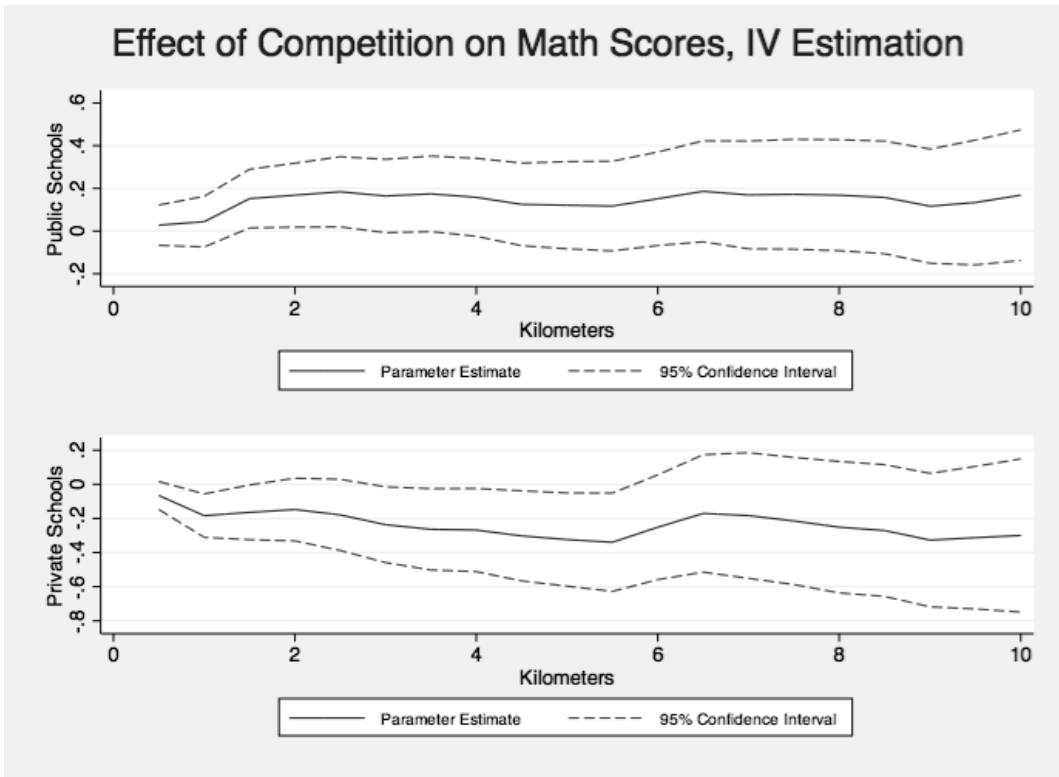


Figure 3: Math test scores

Estimations using Spanish test scores show a negative effect of competition on the scores of public schools, which can be seen in the positive estimation of the parameter γ . The sign of this effect means that as the Herfindahl index decreases—and the level of competition increases—the school's test results decrease. This result is statistically different from zero at a 95 percent confidence level for public schools. For private schools, point estimations show an opposite sign: an increase in competition has a positive effect on school outcomes. However, this last result is only marginally significant and not statistically significant for most of the radii, which indicates that the statistically significant effect when the radius is one kilometer could be due to type I error instead of a real effect. However, the fact that all estimations have the same negative sign, a relatively close magnitude, and are almost all significant at a 90 percent level makes it hard to reject the idea that there is a positive effect of competition.

The result for public schools has an absolute value around 0.2, which means that a decrease in one standard deviation in the Herfindahl index (about 0.2 for radii between two and six kilometers) generates a decrease of about 0.04 standard deviations in the test.

Estimations using math test scores are presented in figure 3. These results have the same direction as those using Spanish scores, but in this case the positive effect on private schools is statistically significant at a 95 percent confidence level, while the negative effect is not. Additionally, the point estimation is higher for private schools—it reaches approximately 0.35 when the radius is 5.5 kilometers—and lower for public schools. When competition is measured within a distance of 5.5 kilometers, a change in one standard deviation in the Herfindahl index generates an increase of about 0.064 standard deviations in private schools' math scores.

Although not all the results are statistically significant at a 95 percent level, they show a consistent pattern: while competition positively affects the test scores of private schools, whose incentive structures seem to be more sensitive to competition, it negatively affects the scores of public schools. One possible explanation for this last result is a creaming effect generated when private schools obtain higher scores: good private schools prompt good students

to move from public to private schools, increasing the segregation in student achievement. According to the evidence shown in F. Gallego and A. Hernando's manuscript "School Choice in Chile: Looking at the Demand-Side," the explanation is likely this demand reaction, as opposed to private schools selecting only the best students.¹⁷

Estimations show the effect of the school's incentive structure on the response to competition. While competition positively affects private schools with an increase in test scores (significantly for math tests), it negatively affects public schools (significantly for Spanish tests). This difference in sign could be due to a creaming effect, where more low-achieving students remain in public schools. These results also suggest that the relevant market for a school can be approximated to include all the schools within a distance of no greater than six kilometers. Specifically, results show that the effect is more important for public schools within a radius of about 2.5 kilometers. For private schools, this radius is about 5.5 kilometers. Although this result is consistent with the fact that private school students tend to travel farther than public school students,¹⁸ the difference in competition radius according to this model is much greater.¹⁹ It is important to note that this conclusion is conditional on the fact that the measurements used were of fourth-grade test scores. If a family's willingness to travel for education increases with the age of the student, as suggested by Chumacero et al.,²⁰ then a school's proximity is more important for the families of younger students and the relevant market should be wider when schools compete for older students.

The results obtained for the rest of the covariates are similar to those typically obtained in the literature, with a positive effect of both income and private status on test scores. This last result means that there are differences between private and public schools that cause private schools to have higher scores regardless of the competition level.

7. Summary and Conclusions

The potential effect of competition on school performance has been widely debated in the United States and abroad. Parallel to the political discussion, an important body of academic research has been generated that tries to address this question.

Most of the literature on this topic fails to address the MAUP: these studies use measures of competition that are determined by administrative boundaries, which are not necessarily good representations of the real competition that a school faces. For any school, there is a probability that some schools within the same administrative unit are not real competitors, because the administrative unit is too wide and the schools are too far apart. There is also a probability that some schools outside the administrative unit are indeed real competitors: even though they are in an adjacent administrative unit, the two schools could be near enough for families to be able to choose between them for their children.

In this article, I address the MAUP by estimating the effect of competition on school outcomes without using administrative boundaries. To do this I use data from Chilean urban schools that include each school's latitude and longitude, and build a measure of competition for each school using information about the characteristics of the schools that are within a certain radius. Given that the area of relevant competition is unknown, I try to solve for the radius empirically by estimating the competition effect at different length values, from one-half to ten kilometers.

Using past levels of competition as an instrument for schools' behavior to address potential reverse causality, and controlling for political factors, the difference in differences estimations show that there is a statistically significant effect of competition on Spanish test scores for public schools and on math test scores for private schools. These effects have a higher impact when the radius is 2.5 kilometers for public schools and 5.5 for private ones, and the effect disappears after six kilometers for both types of schools. A decrease in one standard deviation in the Herfindahl index of student share generates an increase of 0.064 standard deviations in private schools' math scores and a decrease of 0.04 standard deviations in Spanish scores in public schools.

Competition is also associated with a positive effect on Spanish test scores for private schools of about the same magnitude as the negative effect for public schools, and a negative effect on math scores for public schools, slightly lower than the one for Spanish scores. However, these results are only marginally significant.

The most likely explanation for the different directions of the estimated effects for public and private schools is the disparity in the schools' incentive structures. There also may be a creaming effect at play, where the best students move to private schools to the detriment of the test score results of public schools.

The paradox, then, is that arguments both in favor of and against school competition seem to have empirical support. Competition has a dual effect. Although with a good incentive structure competition can raise a school's performance, it also segregates students, which negatively affects the more vulnerable ones. And although school competition segregates students and hurts the most vulnerable ones, if there is an appropriate incentive structure it can also improve a school's performance.

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Endnotes

[1] I thank Professor Francisco Gallego from the Institute of Economics at the Pontificia Universidad Católica de Chile for access to data on geo-referenced school location; Professor Solomon Hsiang, because this paper was originally my final project for his course "Spatial Data and Analysis" at UC Berkeley; and the PMJ team, especially Linden Bairey, for outstanding editing work.

[2] M. Friedman and R.D. Friedman, *Capitalism and Freedom: Fortieth Anniversary Edition* (University of Chicago Press: 2002).

[3] D. Card, M. Dooley, and A. Payne, "School Competition and Efficiency with Publicly Funded Catholic Schools," *National Bureau of Economic Research*, Working Paper No. 14176 (2008)

[4] F. Gallego, "School Choice, Incentives, and Academic Outcomes: Evidence from Chile," *Econometric Society Latin American Meetings* No. 39 (2004).

[5] F. Gallego, "When Does Inter-School Competition Matter? Evidence from the Chilean 'Voucher' System," *The B.E. Journal of Economic Analysis and Policy* 13(2) (2012): 525-562.

[6] C. Neilson, "Targeted Vouchers, Competition Among Schools, and the Academic Achievement of Poor Students," *Job Market Paper* (2013).

- [7] J. Rothstein, "Does Competition Among Public Schools Benefit Students and Taxpayers? A Comment on Hoxby," *National Bureau of Economic Research*, Working Paper No. 11215 (2000).
- [8] C.T. Hsieh and M. Urquiola, "The Effects of Generalized School Choice on Achievement And Stratification: Evidence From Chile's Voucher Program," *Journal of Public Economics* 90(8-9) (2006), 1477–1503.
- [9] C. Sapelli and B. Vial, "The Performance of Private and Public Schools in the Chilean Voucher System," *Latin American Journal of Economics* (formerly *Cuadernos de Economía*) 39(118) (2002), 423–454.
- [10] S.F. Reardon and D. O'Sullivan, "Measures of Spatial Segregation," *Sociological Methodology* 34(1) (2004), 121–162.
- [11] R. Chumacero, D. Gómez, and R. Paredes, "I Would Walk 500 Miles (If It Paid): Vouchers and School Choice in Chile," *Economics of Education Review* 30 (2011), 1103–1114.
- [12] New mayors of the *municipalidades* were elected in October 2008. Therefore, there is only one control that indicates if the year is later than 2008.
- [13] National data from the Education Quality Agency in Chile, <http://www.agenciaeducacion.cl/simce/bases-de-datos-nacionales/>
- [14] The socioeconomic groups in Chile are classified in five categories from A to E, with A being the group with the highest income and E the one with the lowest.
- [15] F. Gallego, C. Rodríguez, and E. Sauma, "The Political Economy of School Size: Evidence from Chilean Rural Counties," EH Clio Lab, *Instituto de Economía, Pontificia Universidad Católica de Chile*, Working Papers ClioLab No. 8 (2010).
- [16] Neilson, "Targeted Vouchers, Competition Among Schools, and the Academic Achievement of Poor Students."
- [17] F. Gallego and A. Hernando, "School Choice in Chile: Looking at the Demand-Side," unpublished manuscript, Pontificia Universidad Católica de Chile (2009).
- [18] Chumacero et al., "I Would Walk 500 Miles (If It Paid): Vouchers and School Choice in Chile."
- [19] Chumacero et al. (2011) report that on average a public school student travels 2.57 kilometers, while a student who attends private school travels an average of 2.78 kilometers.
- [20] Chumacero et al., "I Would Walk 500 Miles (If It Paid): Vouchers and School Choice in Chile."

BANGLADESH WATER MANAGEMENT: COOPERATIVE TRANSBOUNDARY STRATEGIES

Lana Zaman

Edited by Brendan Rowan

Bangladesh frequently suffers from floods and water scarcity due to seasonal fluctuations in river flow. Development economists suggest that these water issues contribute in large part to the country's poverty and underdevelopment. In recent decades, climate change and politics have exacerbated these issues. This paper is an exploration of policy solutions Bangladesh can employ to address water management, particularly through collaboration with its neighbors, India and Nepal. By negotiating with neighboring countries, Bangladesh may strive to achieve one of the following structural solutions:

1. Decreased water diversion in India to prevent water shortage in Bangladesh.
2. Increased upstream water absorption in India to prevent flooding in Bangladesh.
3. Development of water storage facilities in Nepal to regulate water shortage downstream.

Additionally, this cross-country collaboration could generate softer non-structural solutions like the sharing of climate data and research facilities in order to generate better disaster preparedness and coping mechanisms.

Introduction

Throughout history, water rights and responsibilities have been a contentious global political issue. Proximity to water was essential to all human settlements for agriculture, fishing, and transportation. With the advent of dams, reservoirs, and other manmade technologies to control water flow, diplomacy on the matter has become essential. Rivers and floods do not respect national boundaries, and countries can achieve solutions that are safer, stronger, and more cost-effective by sharing the costs and benefits of this development. By cooperating to distribute rights and responsibilities, regional riparian countries—those situated on or near a body of water—can ensure equitable sharing to avoid water scarcity and develop strategies to minimize the adverse effects of flooding.

This paper examines potential transboundary solutions to water problems in Bangladesh. Recommendations are highly contextual and based on the specific geographic

and socio-economic climate of South Asia. Political and economic relations are also taken into consideration, and proposed strategies are partly informed by the United Nations Economic Commission for Europe's Convention on the Protection and Use of Transboundary Watercourses and International Lakes. Case studies within South Asia are also considered for more context-specific examples.

Frameworks

In examining these issues and potential solutions, I will use several frameworks outlined below.

1. The 2009 United Nations *Transboundary Flood Risk Management Report*: Recommendations and approaches to flood issues are informed in large part by the tenets of this recent UN report.
2. Nested Game Theory: This theory addresses situations in which two actors negotiate on multiple unrelated issues.

This structure is useful because Bangladesh collaborates with neighboring riparian countries on various matters, many of which are unrelated to water.

3. Prisoner's Dilemma: This framework refers to situations in which each actor acts to maximize personal benefit independent of the other actor's actions. I will apply this framework to countries' water use and examine the potential to change outcomes through collaboration.

Background

Bangladesh is located on a flood plain at the basin of the Ganges, Meghna, and Brahmaputra rivers. The ground is incredibly fertile for agriculture, and the waters are abundant with fish. The rivers offer excellent transportation routes for trade and access to seaports, and stored river run-off provides the country with safe drinking water.

Since the 1800s flooding has been a major problem for Bangladesh. Although flooding is a normal and healthy part of the environmental cycle, anthropogenic climate change over the course of the last few decades has increased both the frequency and severity of these floods. This increase has catastrophic implications for the future of Bangladesh, which is expected to be submerged by rising sea levels before the end of the century. Given that Bangladesh contributes only 0.17 percent of global carbon dioxide emissions,¹ it is a dramatic example of a country disproportionately harmed by climate change.

Flooding is largely considered one of the biggest causes of poverty and underdevelopment in Bangladesh. Bangladesh is on the UN's list of Least Developed Countries and depends heavily on agriculture, which accounts for 23 percent of the country's GDP and 60 percent of its employment.² During floods, the destruction of crops, fisheries, and capital damages not only the current production, but also the ability of landowning farmers to hire workers during the next season. The ensuing unemployment has immense macroeconomic repercussions. Unemployment reduces consumption, which in turn reduces aggregate demand, further decreasing domestic production. Poverty and high population density magnify the impact of flooding in Bangladesh. Communities most affected by flooding tend to be the poorest with the least political voice. Their poverty

and lack of political voice is another reason why measures to address the situation have been insufficient to date.

In addition to the flooding problems, Bangladesh regularly experiences water scarcity during the annual dry season from October through March. Water scarcity results in increased salinity of Bangladeshi rivers, which reduces the availability of safe drinking water and damages industries like fishing and agriculture. A comprehensive water strategy should address both flooding and water scarcity. This paper examines potential long-term solutions to Bangladesh's water problems with a focus on transboundary agreements with neighboring countries to implement a regional water strategy.

Nature of Floods

Bangladesh suffers from three different types of floods. Tidal flooding, which occurs when the sea level rises, inundates the southern part of the country. This type of flood is gradual and generally easy to forecast, allowing time for warning and preparation. The second type, rain flooding, occurs primarily along the western coast during the monsoon season. Excessive rain can also cause rivers to overflow, which results in the third type of flooding: riverine flooding.³ This paper focuses on riverine floods, as the rivers of Bangladesh cross international boundaries and would be best managed through regional strategy. Additionally, riverine floods are the most likely to become flash floods. These floods advance much faster and leave less lead-time for disaster preparation.

Bangladesh is home to some 230 rivers, most of which flow through other countries, including India, Nepal, Bhutan, and China. As the riparian country with the lowest elevation, Bangladesh suffers most severely from fluctuations in river flow. Past proposals have treated the matter as a country-level problem, but collaboration with other riparian countries allows for better solutions.

Politics of Water Management in Bangladesh

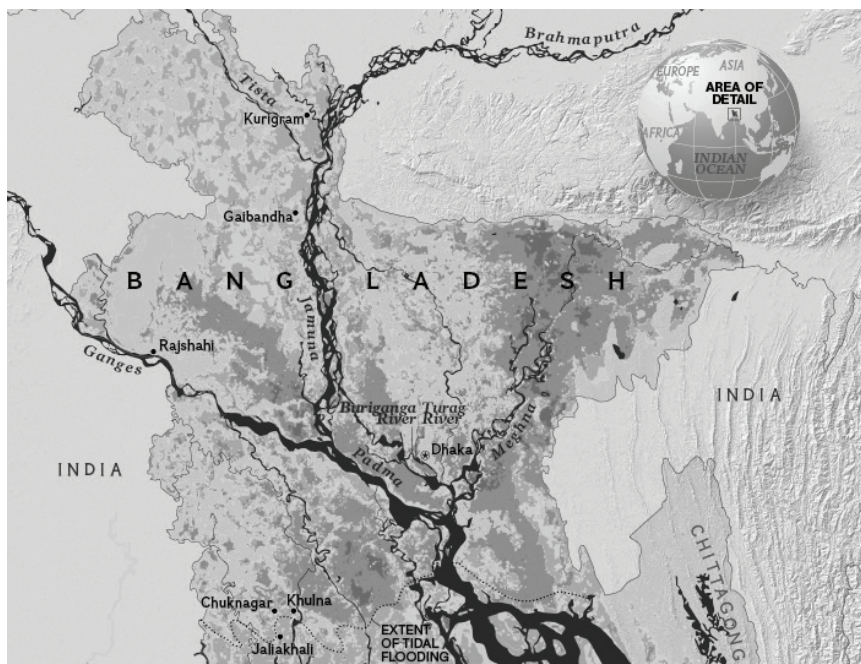
The political activity of post-British India has heavily influenced the current water management strategy in Bangladesh. Bangladesh, India, and Pakistan were all one country while under colonial rule, so river matters were addressed

jointly and without dispute. After the Partition in 1947, there were a number of river disputes between India and West Pakistan (present-day Pakistan). These disputes were resolved with the signing of the Indus Water Treaty in 1960; despite poor relations between the two countries, the Treaty has survived three wars and is still in effect today. It includes a clause stating that major water disputes must be resolved by a politically neutral professional engineer selected and mutually agreed upon by both countries, such as an engineer from the World Bank.⁴ Bangladesh, on the other hand, no longer has good water management relations with India and may benefit from increased knowledge of the Indus Water Treaty.

After British colonialism, India and East Pakistan (present-day Bangladesh) continued to share water from the Ganges largely without contention through the Bangladesh Liberation War in 1971. Complications only arose in 1974 with the construction of the Farakka Barrage, a dam in West Bengal.

Bangladesh Flood Risk Map

In an effort to flush out the Kolkata Harbor, India built the Farakka Barrage to divert water away from the Ganges and into the Hooghly river by the harbor. The Barrage compounds water scarcity issues in Bangladesh during the dry season and can cause flooding due to backwater buildup



Source: National Geographic⁵

during the rainy season. In 1975, Bangladeshi president Sheikh Mujibur Rahman signed an agreement with India stipulating that during the lean season, Bangladesh would receive 80 percent of the river flow from the point at the Farakka Barrage. India and Bangladesh shared friendly relations at the time, particularly because India had assisted in Bangladesh's liberation.

However, relations deteriorated after Rahman's assassination in a coup later that same year, and India began diverting water in excess of the initial agreement. Exacerbating the issue, water flow was naturally lower than expected in the Ganges, so water scarcity was severe. Negotiations continued for many years and culminated in the signing of the Ganges Water Treaty in 1996. Under this thirty-year treaty, Bangladesh and India agree to split the water equally during the lean season and to apportion a higher percentage to Bangladesh the rest of the year. This allocation is a departure from the initial split of 80 percent to Bangladesh, and as a result the country continues to suffer from annual water scarcity.

Previous Proposed Solutions

Bangladesh regularly spends approximately 20 percent of its budget on flood protection measures.⁶ These measures focus on raising embankments, particularly those surrounding the capital city, Dhaka. Many conjecture that Dhaka is now "flood-proof," but this infrastructure has lowered other parts of Bangladesh and made them more vulnerable.

Solutions to the flooding problem take two main forms: structural solutions and non-structural solutions. Structural solutions are infrastructural measures taken ex-ante, including drainage systems, forestation, and other planned physical and organizational structures for flood management. Many of the conventional structural solutions—reservoirs, flood diversions, and flood bypasses—are not possible in Bangladesh because of its uniquely flat topography.

Non-structural solutions center on the sharing of information and may

include the coordination of NGOs and aid organizations, flood forecasting, and early warning.⁷ Forecasting floods and deploying early warnings have been some of the most beneficial non-structural solutions, and these systems have saved the most lives. The technology for forecasting floods has vastly improved in the last two decades, and weather stations have been built across Bangladesh. In 2007, the country implemented a comprehensive early warning system to inform people in rural areas of impending disaster.⁸ However, without a large-scale, ex-ante structural solution, Bangladesh is unlikely fix the problem in any sustainable way.

Over the last few decades, multilateral international organizations have proposed a number of solutions to rectify the problem, the largest of which was called the Flood Action Plan (FAP). Proposed by the World Bank in response to the major floods in the late 1980s, this plan centered on the construction of very tall embankments to protect flood zones. This action plan was never fully executed, because it was prohibitively expensive and politically infeasible. Many international multilaterals were unwilling to fund the plan due to Bangladesh's reputation for poor governance and corruption.⁹

Another proposed solution is to relinquish the regions of Bangladesh that are the most submerged and intensify flooding in these low embankments, using them as water storage to divert water away from the remainder of the country. Bangladesh could then focus on strengthening the infrastructure and resiliency of the rest of the country. China used a similar method to build its large water storage facilities along the Yangtze to alleviate flooding.¹⁰ This proposal, however, is met with immense political opposition due to the large financial and social costs associated with such a major geographic change. From a practical perspective, Bangladesh is already one the most densely populated countries in the world, and relocating a large subset of the population from relinquished flood zones presents a major logistical challenge. It would additionally constitute a loss of culture for and a sociological burden on those relocating. Based on previous opposition, this option is not politically feasible.

Transboundary Solution Proposals

Poverty and flat geography limit Bangladesh's ability to address its water issues alone. Based on the guidelines of the UN's *Transboundary Flood Risk Management Report*, countries should formalize agreements to compose a comprehensive and binding document that details rights and responsibilities. This transboundary cooperation requires the alignment of differing political, legal, and institutional structures, which can be challenging in the complex and sometimes corrupt political climate of South Asia. Below are recommendations for potential transboundary solutions, both structural and non-structural.

Non-structural solutions

According to the UN report, many flood regions lack formal legal or institutional cooperation on risk management, though informal technical cooperation is quite common. To a limited extent, Bangladesh and India collaborate to forecast floods and provide early warning. In August 2014, the United Nations Development Program (UNDP) initiated a project to crowd-source flash flood warnings. Though the project is still underway, its goal is to establish a system—possibly using Twitter or Facebook—through which people in upstream locations (likely in India) can use mobile phones to warn the downstream locations of impending flash floods. While Bangladesh has a reasonably strong system for forecasting gradual floods, the sudden flash floods from the Himalayas can destroy crops and flatten houses in a matter of hours. Enabling extra lead time through an early warning system would allow farmers and fishers time to protect property and flee to safety.¹¹

Apart from these recent informal developments, there is little cross-border cooperation for sharing hydro-meteorological data. Institutionalizing a system for data sharing would strengthen resiliency and create a broader base of information to support future research for solutions. This cooperation may be accomplished by integrating flood risk management plans into existing contracts. In this case, Bangladesh may include a section on sharing flood data in the existing Ganges Water Treaty.

Structural solutions

I will now explore three potential transboundary structural solutions and strategies for implementation. These solutions address either water scarcity or flooding and may be pursued individually or in combination with each other.

1. **Flood Diversions:** India's use of the Farrakka Barrage has negatively impacted Bangladesh's water flow, especially by intensifying water scarcity during the dry season. Bangladesh may work to reach an agreement with India under which India will limit water diversion in the dry season and divert or store additional water during the rainy season. This new agreement would ameliorate some of the negative effects associated with the Barrage.

2. **Increasing Rain Absorption:** The Ganges river basin, which spans Bangladesh, India, and Nepal, acts somewhat like a sponge that absorbs rainwater in Bangladesh. If the basin is already saturated at the start of the monsoon season, there will be more groundwater runoff and the river flow will increase, making downstream flooding more likely. If, on the other hand, the water content in the basin is low, it may absorb excess water from the river and reduce flow. Pumping out Indian groundwater during the rainy season could decrease the likelihood of flooding in Bangladesh.¹² Bangladesh may consider an approach to enlist the cooperation of India on this matter.

3. **Water Storage Facilities in Nepal:** To address water scarcity, India, Bangladesh, or both countries could pay Nepal to build large-scale water storage facilities along the tributaries that flow into the Ganges. These facilities could be filled during the monsoon season and released into the Ganges during the dry season. This water storage would reduce India's incentive to divert water from the Farakka Barrage, preventing water scarcity in Bangladesh.

Economic Approaches to Enlist Transboundary Participation

Since all three of these solutions hinge on the participation of India, I will now explore strategies to enlist such cooperation.

The largest impediment to collaboration is that Bangladesh, as the downstream country, is in a poor position for

bargaining. India, as the upstream country, has incentive to divert water from the river in the dry season and release water when rains are at their heaviest. This behavior leads to the least desirable outcomes for Bangladesh. A potential solution could be for Bangladesh to compensate India to release additional water in the dry season or to absorb it during a monsoon. However, given the country's poor economic standing, Bangladesh cannot afford to take this approach. The grounds for the negotiation are unequal. Here we may apply the tenets of nested game theory, which addresses situations in which two actors negotiate on multiple unrelated issues. In such situations, an actor with weak bargaining power may have incentive to link two separate issues to improve its overall bargaining status.¹³ In order to negotiate effectively, Bangladesh must leverage its comparative advantage. In this case, that advantage is transportation.

Located by the Bay of Bengal, Bangladesh has access to valuable transportation routes and water ports for trade. India has taken interest in gaining greater access to seaports at Chittagong and Mongla. Allowing India greater access to these ports may serve as a bargaining chip for further negotiations on collaborative water management.

Furthermore, India's eastern states are landlocked and separated from the rest of India by Bangladesh. Only a very narrow transport corridor called the "chicken neck" connects these states to the remainder of India. In the past, Bangladesh has not allowed India access to its roads for trade with these eastern states,¹⁴ though negotiations are currently underway for Bangladesh to grant India access.

By linking this issue to the water issues, Bangladesh may strengthen its negotiation status and effectively demand greater cooperation on infrastructure matters. In theory, such a linkage would also allow for a solution in which both countries benefit and neither is made worse off. Bangladesh would give up some transportation resources in order to gain flood resiliency, and India would save on transportation costs in exchange for investing in flood infrastructure. In economic terms, the problem may be considered an example of the Prisoner's Dilemma: each actor acts in a manner to maximize personal benefit, independent of the other actor's actions. If Bangladesh and India were to

collaborate on both water and transportation issues, the two countries would reach a different agreement with respect to these goods.¹⁵ This negotiation tactic could address the first two structural solutions listed in the section above. Addressing the third requires the participation of a neighboring country, Nepal.

Bangladesh and Nepal have always had friendly relations; Nepal was one of the first countries to recognize Bangladesh as an independent country after the War of Liberation. Because Nepal is landlocked and heavily dependent on neighboring countries for imports, its support was in part a strategic movement made in the hope of gaining access to Bangladesh's water ports and transportation systems.¹⁶ The two countries continue to have positive relations and trade agreements. They have also had similar complaints about shared water rights with their larger and more powerful neighbor country, India.

However, because India is geographically located between Bangladesh and Nepal, these countries are limited in their capacity to collaborate independently. Furthermore, both Nepal and Bangladesh are Least Developed Countries that depend heavily on India for both imports and exports. This reliance greatly limits bargaining power. Nepal in particular has been heavily dependent, as it is surrounded by India on three sides and the fourth is blocked by the Himalayas.

China, however, has recently challenged India's monopoly on trade with Nepal. After reviving ancient trade routes via Tibet, Nepalese trade with China increased by approximately 75 percent in the years from 2011 to 2013¹⁷ and is still on the rise. Previously, weak infrastructure and transportation limited trade, but China is increasingly investing in Nepal: the Chinese are constructing the country's first eight-lane highway and investing in power plants, factories, and other infrastructure projects.¹⁸ India believes that China looks to Nepal as a "gateway" to trade in the rest of South Asia and sees these investments as a challenge to Indian dominance of the market. As a result, Nepal is in a stronger position to bargain. Nepal may agree to conditions such as reserving certain transportation routes for India or committing to purchase specific goods from India in exchange for water rights.

In the context of water resource management, Nepal's main challenge is water scarcity. Though the country has a number of rivers and tributaries, its landlocked geography and absence of good infrastructure make water scarce and difficult to transport, especially in rural areas. Construction of water storage facilities would bolster Nepal's water supply and build reserves for India and Bangladesh that could be released into the Ganges during the dry season. If Bangladesh and Nepal were to partner on the matter, they might jointly persuade India to invest in Nepalese water infrastructure and storage facilities that would benefit all three countries. The prospect of increased access to Bangladeshi water ports may further persuade Nepal to participate.

An important caveat to proposed negotiations with India is that while Bangladesh can and should leverage its comparative economic advantage in transportation, India is still an important trade partner and it is essential for Bangladesh to maintain good relations. In recent years, India has eliminated tariffs to Least Developed Countries, allowing Bangladesh and Nepal to export duty-free. While Bangladesh is still a net importer from India, the waiving of tariffs mobilizes production and bolsters Bangladesh's economic growth. Ultimately, flooding in Bangladesh is a far larger impediment to economic growth than import tariffs in India, but in the interest of preserving these benefits, Bangladesh may avoid taking a combative stance that would jeopardize this relationship.

Since water policy is heavily politicized, cooperative flood risk management may be publicized as collaboration, perhaps beginning with simpler measures of data sharing before moving on to more contentious issues of infrastructure. Building coalition around shared river management may make participants more open to negotiation than they would be if they felt that they were in competition with one another.

Conclusion and Recommendations

Bangladesh has limited capacity to address its flooding and water scarcity problems alone. The country's poverty prevents large-scale investment, while its flat topography eliminates the possibility of internal structural solutions. Non-structural solutions such as forecasting and early

warning systems have been successful, but these measures do not provide long-term or sustainable solutions.

I recommend a transboundary water management approach involving Bangladesh, India, and possibly Nepal. On the non-structural side, this approach may include sharing hydro-meteorological data in order to improve forecast and early warning systems. This measure is likely the easiest to implement since both countries are already collecting data. Bangladesh and India may formalize their agreement by including a clause on sharing data in the existing Ganges Water Treaty.

On the structural side, I recommend three possible solutions to address flooding, water scarcity, or both through cross-boundary collaboration:

1. **Flood Diversions:** To ameliorate water scarcity and minimize flooding, India could limit dry season water diversion and divert or store additional water during the rainy season.
2. **Increasing Rain Absorption:** To minimize flooding during the monsoon season, India could drain groundwater so that the river basin absorbs more river water, reducing the likelihood of flooding.
3. **Water Storage Facilities in Nepal:** India, Bangladesh, or both countries could pay Nepal to build large-scale water storage facilities along the tributaries that flow into the Ganges. These facilities could be filled during the monsoon season and released into the Ganges during the dry season. This solution would reduce India's incentive to divert water from the Farakka Barrage, preventing water scarcity in Bangladesh.

With a weak bargaining position, Bangladesh may choose to link water issues to transportation issues in order to more effectively enlist Indian cooperation. For the third structural solution, Bangladesh may also collaborate with Nepal, a long-term ally that has similar water grievances with India. Nepal's recent increase in trade with China has challenged India's position as the dominant market power in South Asia. Nepal may leverage this shift to enlist India's participation on the third structural solution to address water scarcity in all three countries.

On a trajectory to become completely submerged in the next century, the window of time to address Bangladesh's water issues is small and rapidly closing. These transboundary solutions present a variety of methods and innovative strategies to address some of the problems.

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Endnotes

- [1] World Bank Development Research Group, "Climate Proofing Infrastructure in Bangladesh," November 2010.
- [2] Ashild Kolas, Line Barkved, Joyeeta Bhattacharjee, Katherine Edelan, Kristian Hoelscher, Silje Holen, Farzana Jahan, Hari Bansh Jha, and Jason Miklian, "Water Scarcity in Bangladesh: Transboundary Rivers, Conflict and Cooperation," *Prio Report*, (2013), http://file.prio.no/publication_files/prio/PRIO%20Report%20-%20Water%20Scarcity%20in%20Bangladesh.pdf
- [3] Mizunar Rahman, Amirul Hossain, Amartya Kumar Bhattacharya, "Flood Management in the Flood Plain of Bangladesh," (2004), http://www.academia.edu/702051/Flood_Management_in_the_Flood_Plain_of_Bangladesh
- [4] Kolas et al, "Water Scarcity in Bangladesh: Transboundary Rivers, Conflict and Cooperation."
- [5] National Geographic, "Bangladesh Flood Risk Map," <http://ngm.nationalgeographic.com/2011/05/bangladesh/flooding-interactive>
- [6] Nasrul Islam, "Flood Control in Bangladesh: Which Way Now?" Sustainable Development Networking Programme, Bangladesh, http://www.sdnbd.org/sdi/issues/floods_drainage/article/flood%20control%20in%20Bangladesh.htm
- [7] Pallub Mozumder, "Exploring Flood Mitigation Strategies in Bangladesh," University of New Mexico, (2005), <http://repository.unm.edu/bitstream/handle/1928/10465/Exploring%20Flood%20Mitigation%20Strategies%20in%20Bangladesh.pdf?sequence=1>

[8] Bimal Kanti Paul, "Why relatively fewer people died? The case of Bangladesh's Cyclone Sidr," *Natural Hazards* 50 (2009): 298-304, http://download.springer.com/static/pdf/364/art%253A10.1007%252Fs11069-008-9340-5.pdf?auth66=1419015842_c75e384fd3bc930054e6b01a39b780b&ext=.pdf

[9] Hugh Brammer, "After the Bangladesh Flood Action Plan: Looking to the Future," *Environmental Hazard Human and Policy Dimensions* (2009), <http://www.southasia.ox.ac.uk/sites/sias/files/documents/Oxford%20University%20CSASP%20-%20Work%20in%20Progress%20Paper%2017%20Brammer%20Flood.pdf>

[10] Mozumder, "Exploring Flood Mitigation Strategies in Bangladesh."

[11] Anu John, "Bangladesh| Crowdsourcing flash-flood warnings that race the waters downstream," UNDP in Asia and the Pacific, August 21, 2014, <http://www.asia-pacific.undp.org/content/rbap/en/home/blog/2014/8/21/bangladesh-crowdsourcing-flash-flood-warnings-that-flow-faster-than-the-waters/>

[12] Peter Rogers, Peter Lydon, and David William Seckler, *Eastern Waters Study: Strategies to Manage Flood and Drought in the Ganges-Brahmaputra Basin* (Arlington, VA, Irrigation Support Project for Asia and the Near East ISPAN, 1989).

[13] Lynne L. Bennet, Shannon E. Ragland, and Peter Yolles, "Facilitating International Agreements through an Interconnected Game Approach: The Case of River Basin," *Natural Resource Management and Policy*, Vol. 11 (1998): 61-85.

[14] Zaid Sattar, Mahjaban Halima Rahman, Sadiq Ahmed, "Transit Arrangements for India Trade Through Bangladesh," International Growth Center, August 28, 2014, <http://www.theigc.org/project/transit-arrangements-for-indian-trade-through-bangladesh/>

[15] Mozumder, "Exploring Flood Mitigation Strategies in Bangladesh."

[16] "Bilateral Relations (Nepal-Bangladesh)," Government of Nepal Ministry of Foreign Affairs, <http://www.mofa.gov.np/en/bilateral-relations-nepal-bangladesh-126.html>

[17] Melati Kaye, "Renewed Nepali trade route draws regional ire," *Aljazeera*, June 29, 2013, <http://www.aljazeera.com/indepth/2013/06/2013623123438887107.html>

[18] Natalie Obiko Pearson, "China Breaks India Monopoly on Nepal Economy as Investment Grows," *BloombergBusiness*, December 14, 2014, <http://www.aljazeera.com/indepth/2013/06/2013623123438887107.html>

CONFRONTING WEALTH INEQUALITY

In *Capital in the Twenty-First Century*, French economist Thomas Piketty proposes a comprehensive, progressive global capital tax as a means of addressing wealth inequality.¹ While admitting that the coordination required to implement this tax renders the proposal idealistic, Piketty argues that solutions such as a global tax are required to halt what he calls a “fundamental law of capitalism”: the tendency for wealth to accumulate when interest rates are greater than the economy’s growth rate ($r > g$). Piketty argues that the gap between r and g is “one of the important forces that can account for the historical magnitude and variation in wealth inequality.”²

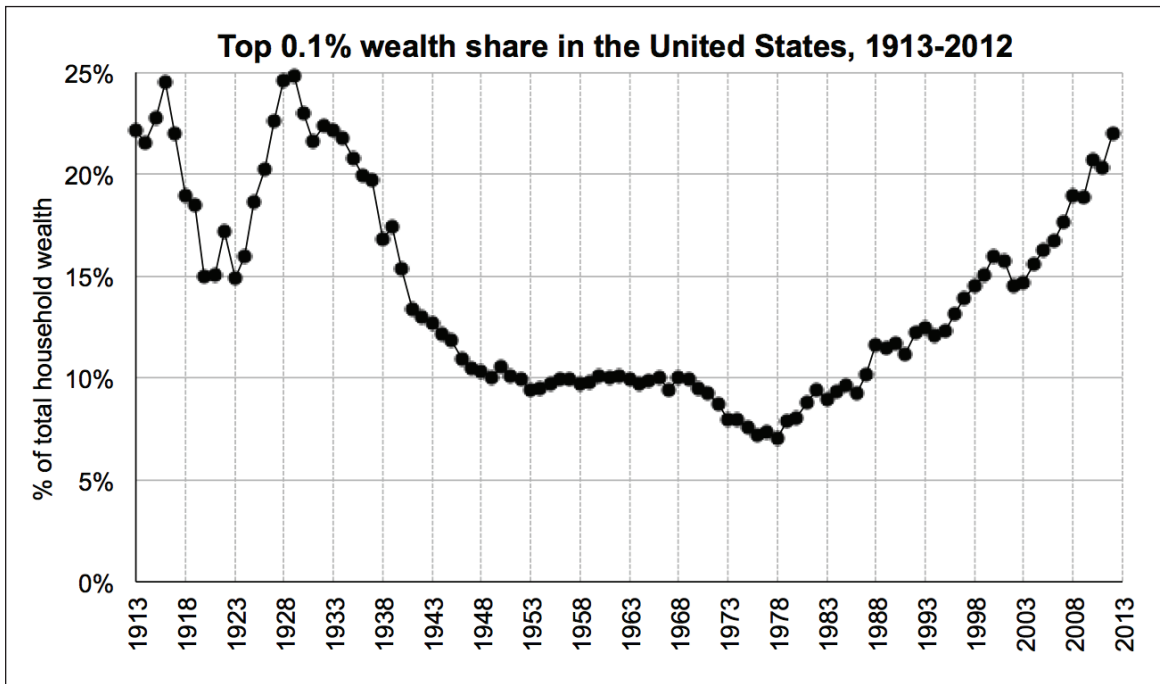


Figure 1: Top 0.1% wealth share in the United States.

Source: Saez and Zucman, 2014

Emmanuel Saez and Gabriel Zucman show that wealth inequality has exploded in the U.S. over the past four decades.³ As they put it, “Since the housing and financial crisis of the late 2000s there has been no recovery in the wealth of the middle class and the poor. ... In 2012, the wealth of the top 1 percent increased almost back to its peak level of 2007. The Great Recession looks only like a small bump along an upward trajectory.” Figure 1 shows how the wealth share of the top 0.1 percent of U.S. wealth owners is approaching levels seen just prior to the Great Depression in 1929.

A WEALTH TAX FOR THE STATES

Roy Ulrich

Edited by Matt Unrath and Darian Woods

In the United States, a federal wealth tax suffers from a problem: it is likely to be held constitutionally infirm because the United States Constitution bars any direct taxation on assets by the federal government unless the revenue collected is apportioned among the states on the basis of their populations.⁴ State governments, however, could introduce a comprehensive wealth tax on either citizens or corporations. Such a tax could provide beneficial revenue for any number of public services or offset other state taxes.

A Proposal for a Modest Capital Tax

States, especially those without inheritance taxes, could consider imposing a wealth tax on taxpayers with very high net worth.

In practice, a taxpayer would add up her assets (such as cash, real estate, and securities) and subtract her liabilities (debts). The total assets would be taxed annually either at a progressive rate or a flat rate. A progressive rate would be a sliding scale going from perhaps 0.1 percent to 1 percent. A flat rate could be set at perhaps 0.5 percent.

The yearly return would look very much like a net worth statement. Placing a value on publicly held securities would be as simple as looking in the financial section of any daily newspaper at year's end. In the vast majority of states that tax real estate on the basis of current assessed valuation, real estate values would be determined by the current assessed value of the property. Valuation of other hard assets would be determined by independent appraisal.

Addressing Risks

In enforcing the law, the state taxing agency's mission would simply be to determine the existence and value of assets. There would be a risk of individuals transferring some

assets to less visible forms of wealth such as jewelry and art. This behavior would not only reduce wealth tax revenues, but would mean capital is put into uses less productive for the wider economy. To address this, under a net worth tax, the penalties for substantially undervaluing an asset or attempting to hide an asset should be severe. In India, for example, tax filers can face harsh penalties if a listed appraisal is 80 percent or less of an asset's true value.⁵

A high front-end exemption—say, \$10 million to \$20 million—should reduce fears of lower capital investment as a consequence of the tax. In his 2002 book *Top Heavy: The Increasing Inequality of Wealth in America and What Can Be Done About It*, Edward N. Wolff suggests there is no strong evidence that the presence of a wealth tax in eleven western European democracies inhibits savings.⁶

Wealth taxes tend to be unpopular because, unlike income or consumption taxes, measured wealth does not necessarily indicate ability to pay each year. An older person with a large accumulated pension in stocks and term deposits, for example, may be asset-rich but cash-flow poor. To mitigate this, state governments may consider financing options for individuals in such situations.

A final concern is tax flight. Some preliminary research on the mobility of individuals or capital to avoid this taxation suggests this concern is overstated. A study by Charles Varner and Cristobal Young in the wake of the passage of California's Mental Health Services Tax in 2004 indicates that tax rates had little effect on whether millionaires moved out of or into the state.⁷ The measure, Proposition 63, placed a 1 percent surcharge on those with taxable incomes above \$1 million. In another study, Phillip Genschel and Peter Schwartz survey empirical evidence on income taxation and labor mobility and find that better jobs and higher wages—

not tax rates—are the major factors in individuals’ decisions to move from one country to another;⁸ people are much less likely to relocate on account of lower labor income taxation rates. This conclusion is limited to the personal income tax, and these conclusions do not apply to businesses that opt to relocate for tax reasons. Genschel concludes that corporate taxation is a major factor in corporations’ decisions to locate in one country or another. While the evidence on mobility and personal wealth taxation is limited, the evidence on personal income taxes indicates that people respond less sensitively than do businesses to changes in taxation rates.

Alternatives to a Wealth Tax

States already operate a large-scale tax on wealth holdings in the form of property taxes. Rates of these taxes vary widely by state, though in general revenue is largely dedicated to public education. In *Capital in the Twenty-First Century*, Piketty critiques the current structure of property taxes, because states do not distinguish between properties that are still held via debt (or mortgages) and those that are

owned outright.⁹ Property taxes do not tend to be progressive; higher income or wealthier households do not tend to be charged higher rates on their properties. The political obstacle is that these property taxes are particularly unpopular, and reforms—especially those that might produce additional revenue—would be difficult to achieve politically.

In addition to property taxes, the next-closest relative to a wealth tax is the state inheritance tax. Inheritance taxes are nothing more than wealth taxes imposed at death on a small percentage of the population. Progressive tax advocates propose lowering the threshold at which these inheritance taxes become effective and increasing their rates.

States Can Reduce Inequality

Twenty-first century inequality is at least as high as we experienced a century ago. There are tools available to the federal government to tackle this inequality on both the taxing and spending sides. But one tool that will likely be unavailable is a net worth tax. It will be left to the states to impose one.

A CONVERSATION WITH ROY ULRICH

Interview by Matt Unrath and Darian Woods

PMJ: What are the advantages of a wealth tax compared with raising the income tax?

Roy Ulrich: The wealth tax is a tax on very, very wealthy people. It’s not based on the income they generate in any one year, but on the assets they have. It’s not a replacement for the income tax, although it could allow income taxes to go down for low- and middle-income taxpayers. Once states impose this tax, they’re free to decide how to use it.

What really attracted me to the wealth tax is that it hits people at the very top: the 0.01 percent or the 1 percent that people talk about and it’s much better to talk about, from my point of view, the top 1 percent of those with high net worth than those with high incomes.

Income tax is not a secure source of income for states. Incomes fluctuate from year to year. People at the top, for

example, suffered losses and reductions in income in 2008–2009. California suffers when we go through recessions because people at the top don’t make as much.

PMJ: There is renewed interest in the wealth tax since Thomas Piketty’s *Capital in the Twenty-First Century* was released. Did Piketty influence your thinking on the wealth tax?

Roy Ulrich: I first started thinking about a wealth tax from speaking with Ed Wolff at NYU, whose goal for many years has been to impose a federal wealth tax. I sent him a legal memo telling him I thought that, unfortunately, it’s constitutionally infirm. So I’ve known that imposing a federal wealth tax would present a problem.

After Piketty wrote his book, it became clear to me that if states in the U.S. imposed wealth taxes, there is nothing in the federal constitution that would bar the states from doing that. And that was the impetus for writing this paper.

The goal was to get this out to legislators in other states, especially those without an inheritance tax, to get them to think in terms of imposing a wealth tax in their own jurisdictions.

PMJ: Could you speak to the trade-offs—the advantages and limitations—of reforming property taxes? Could these be made more progressive? How might that idea compare with a proposal for states to institute a new wealth tax?

Roy Ulrich: Property certainly is a form of a wealth tax. But there are a lot of people who own stocks, bonds, jewelry, art, and don't own a lot of real estate. They own a lot of liquid assets and are not very heavy into real estate. They may own their homes, but they may not own a lot of real estate, so how do you get into that wealth? And the answer is a wealth tax. Property is just one form of wealth.

And nothing prevents you from imposing a structured property tax in other states.

Of course the property tax is not very popular; it's a very unpopular tax. Neighbors, for example, know what one another is paying. It's very visible. And disgust with the property tax is what gave rise to the 1 percent cap that is in Proposition 13 in California. Homeowners were being driven out of their homes because of high property taxes.

PMJ: Will a wealth tax mean people will transfer productive assets to other less-visible forms of wealth, such as jewelry and art, to avoid detection?

Roy Ulrich: If it's stock, that's hard to evade; if it's real estate, it's hard to evade. Jewelry, art, that's easier to hide, but you can penalize people when it's discovered. In other jurisdictions—and this may not be viable in the United States—if someone hides an asset you can get even more punitive: you can confiscate the entire asset. If we find people are still hiding assets then tax authorities could confiscate it. It might be considered a violation of the Fifth Amendment, which is taking property without due process, but in other countries I think it's a viable alternative.

PMJ: Could you speak to your ideas about the potential revenue from this tax being used to fund other services or to reduce income taxes on lower- or middle-income households, or are you agnostic about the purpose?

Roy Ulrich: How you use this tax is up to you. A lot of states have fiscal problems and have trouble balancing their budgets. And all states have to balance their budgets. How the money is used at state-level is a decision that state governors and state lawmakers have to make. I want to give these people an idea about where they can get extra money, but I don't want to tell them how to spend it.

Roy Ulrich teaches Tax and Budget Policy at the University of California, Berkeley's Goldman School of Public Policy.

Endnotes

[1] Thomas Piketty, *Capital in the Twenty-First Century* (Cambridge, MA: Harvard University Press, 2014).

[2] Thomas Piketty, "About Capital in the Twenty-First Century," *American Economic Review: Papers & Proceedings* 105 no. 5 (2015): 1–6.

[3] Emanuel Saez and Gabriel Zucman, "Wealth inequality in the United States since 1913: Evidence from capitalized income tax data," NBER Working Paper no. w20625 (National Bureau of Economic Research, 2014).

[4] Article I, Section 2 of the U.S. Constitution provides that "... direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective numbers, which shall be determined by adding to the whole number of free persons ... and excluding Indians not taxed, 3/5 of all other persons." Article I, Section 9, Clause 4 reads as follows: "No Capitation or other direct Tax shall be laid, unless in Proportion to the Census or Enumeration hereinbefore directed to be taken." Apportionment among the states on the basis of population (as determined by the census) raises a host of problems, the most serious of which is that it does not factor in the differences in actual wealth that exist in each state. See Roy Ulrich, "The Constitutionality of a Net Worth Tax," *OpEdNews*, January 9, 2015, http://www.opednews.com/articles/The-Constitutionality-of-a-by-Roy-Ulrich-Census_Congress_Politicians_Taxation-150109-245.html.

[5] Indian Parliament, *The Wealth-Tax Act, 1957*. <http://www.legalindia.in/the-wealth-tax-act-1957>.

[6] Edward N. Wolff, *Top Heavy: The Increasing Inequality of Wealth in America and What Can Be Done About It* (New York: New Press, 2002).

[7] Charles Varner and Cristobal Young, "Millionaire Migration in California: The Impact of Top Tax Rates," Working Paper (Stanford Center on Poverty and Inequality, 2012), https://web.stanford.edu/group/scspi/_media/working_papers/Varner-Young_Millionaire_Migration_in_CA.pdf.

[8] Philipp Genschel and Peter Schwarz, "Tax Competition: A Literature Review," *Socio-Economic Review* 9 (2011): 339–70.

[9] Piketty, *Capital in the Twenty-First Century*.

A CONVERSATION WITH WENDY DAVIS

Mary Collins

Edited by Linden Bairey

Former Texas state senator and 2014 Democratic gubernatorial candidate Wendy Davis visited UC Berkeley on March 4 for a speaking event co-sponsored by the Goldman School's Women in Public Policy student group and the Boalt Hall Women's Association. Before the event, Goldman second-year student Mary Collins sat down with Davis for a one-on-one interview to discuss her past achievements, her political aspirations, her 2014 memoir *Forgetting to Be Afraid*, and the importance of women in public policy today.



Wendy Davis, Linden Bairey, and Mary Collins at UC Berkeley
Bora Reed/Goldman School of Public Policy

Mary Collins: What inspired you to write your book?

Wendy Davis: When I was on the Texas Senate floor conducting my filibuster and I was reading the stories of so many women and families who had gone through very painful decisions with regard to abortion, I came really close that day to telling my own story. But I felt that if I did, the day would become about me, instead of about all the people whose voices I was trying to bring to the forefront. But it really stayed with me and I felt an obligation to tell my story because so many people had been so brave about telling their own. My book of course is about much more than my own experience with abortion and the very difficult decision

I had to make in that regard. I wanted people to understand what makes me tick, what my life experiences were, and why I fight for the things I fight for.

Mary Collins: So looking back at your campaign for governor, you had to go from a small state senate campaign team to a larger gubernatorial campaign team. Do you have any lessons learned or best practices to share?

Wendy Davis: We definitely had growing pains. Our senate races in Texas are very big because our senate districts are huge. The districts are larger than congressional districts; they each have about 850,000 people in them. I was accus-

tomed to running a pretty large-scale operation, but that was nothing like running an operation in a state the size of Texas, with a population between 26 and 27 million people. I faced a real challenge because there hadn't been a really serious gubernatorial run in quite a while, and building a team from the ground up to be able to conduct a race of that magnitude was pretty challenging.

Mary Collins: So talking about Texas, Texas had the lowest voter turnout in the nation at 33 percent. According to the organization Vote Riders, there were up to 1.4 million voters without state IDs. I was wondering if you could comment on Texas state ID laws and whether their effects are particularly harsh in areas like Houston's Harris County. Going back, if you were to make any changes to your campaign, what changes would you make regarding voter turnout?

Wendy Davis: Obviously the voter turnout and what we were able to turn out was very disappointing. If we could do it over again, we would run a different type of field campaign to try to make sure, particularly among our low-propensity voters, that we were more active in talking to them at their doors and trying to turn them out. We ran a field campaign based largely on volunteers, which was fabulous. We had a record number—34,000 people—who volunteered in the campaign and we partnered with Battleground Texas, a volunteer organization. But if we had to do it over again, we would have done more in the way of paid field turnout effort. There is no question in my mind that the voter ID law had a very real impact in this election cycle. What was most disappointing was that the federal district court made a determination that the photo ID law in Texas was unconstitutional. Unfortunately, the appellate court allowed the voter ID law to go into place during this election cycle while the appeals of that case were pursued. The briefing of that appeal has just now been filed, I think literally today or yesterday, so the outcome of the appeal and the decision from the Fifth Circuit Court will be available soon. I expect it will go all the way to the Supreme Court.

Mary Collins: Are there other states you know of that are having similar issues with voter ID laws?

Wendy Davis: Texas has the strictest photo ID law on the books and I think that is the reason the district court deter-

mined that it was unconstitutional. There were many things that could have been done to increase people's ability to get the underlying photos in order to receive a voter ID. There was evidence submitted and the state admitted that at least 600,000 eligible voting citizens in Texas were going to lose the ability to vote because they did not have the photo IDs that would be required. Texas also turned down the opportunity to do some things that other states had done. For example, Texas refused to accept student IDs to provide the ability to vote. The state refused to allow any sort of alternative voting scenario for people who didn't have the financial means to get the underlying documents for their photos. That's the real issue here. When people do not have the financial resources to get a birth certificate or whatever else is needed in order to get that photo ID, the requirement becomes a modern-day version of a poll tax. That's truly what is was and the court drew the same conclusion when it issued its ruling.

Mary Collins: It's creating barriers to democracy. On the topic of power and privilege in decision making, did the Texas state legislature reflect its constituents when you were a state senator? How can we get more diversity into public office?

Wendy Davis: You know, it doesn't reflect its constituents and the real reason for that is redistricting. We've had almost two decades of Republican leadership in the state of Texas, actually exactly two decades now. And when you go through two redistricting cycles—we actually went through three because we had interim redistricting that Tom DeLay pushed—those of course provide an opportunity for the folks in power to draw districts in a way that represents their

When people do not have the financial resources to get a birth certificate or whatever else is needed in order to get that photo ID, the requirement becomes a modern-day version of a poll tax.

ability to maintain power, not a way that is reflective of the state. So we have districts that have been drawn where it's the cracking and the packing. Minorities have been packed

into districts where they are allowed to exercise their voices only in a particular district. If they were spread out in a more geographically logical way, their voices would be more present. They would have the ability to elect more people to represent them—not just a single congressman, for example, in the north Texas area. As a consequence of the redistricting policies, minority voices are watered down. Over time that creates even more of a withdrawal of people who are voting, because when they vote and their voices don't result in an outcome that's meaningful for them, they wonder why they should continue to participate in the process.

Mary Collins: Exactly, it's "why should I care?" What about campaign finance, does that create barriers?

Wendy Davis: You know, because we have our own unique campaign finance laws in Texas, what happened at the federal level didn't have the same kind of impact on our state races. It has always been the case in Texas that we have the ability to give an unlimited amount to political campaigns, and so there is no need to hide where the money is coming from or to play games in order to try to maneuver more money to a campaign. Someone could literally write a \$10 million check to you if they wanted to during an election cycle and there is no prohibition against that.

Mary Collins: That's incredible. Speaking of campaigns, there has been a lot of talk about Hillary and she still has not announced her candidacy for office. When did you announce your gubernatorial campaign? [*n.b. Clinton announced her candidacy on April 12, 2015.*]

Wendy Davis: I announced in October prior to the election year, so it was a little more than a year out. I would have liked to announce earlier than that but my father was very, very ill and we were dealing with that before I made my announcement.

Mary Collins: On the topic of women in politics, many people talk about reproductive rights and childcare as if they are "women's issues" or "women's policy." Where do we need to put in the most work in a strategic way to get people—men—to realize that these are really issues that impact them and the economy as well?

Wendy Davis: One of the things I am going to be talking about at this event is taking the conversation from an "us

and them" to a "we." These issues really do impact all of us collectively: as families, as communities, as states, and as a nation. We know the economic arguments demonstrate that when women do better, we all do better. There's no question about that. It makes good sense to support policies that will help to create economic vitality for individual

There are very purposeful efforts to make sure that women candidates are viewed in ways that take away from their accomplishments—efforts that try to diminish their capacities as future leaders. Voters are responding, even if they are unconsciously responding.

women but also, obviously, to recognize what that means for the broader economy. But for me, the real question doesn't necessarily end there. That's an important part of it, but unfortunately it hasn't been enough to really stimulate people to change their voting habits or their belief systems around these issues. So there is something deeper at play there. Tomorrow Ian Haney López, one of your professors at Berkeley Law School, is going to be speaking on his book *Dog Whistle Politics*. I read his book not long ago and was impacted by the perspective that he brings. There is a subtle messaging that occurs and invites people to vote based on anxieties and fears that really can't be overcome by an economic argument. Instead, we really have to get to the root of what those anxieties and fears are.

In gender politics there is so much at play. There are very purposeful efforts to make sure that women candidates are viewed in ways that take away from their accomplishments—efforts that try to diminish their capacities as future leaders. Voters are responding, even if they are unconsciously responding, to efforts to make that happen. So when we don't have women in the conversation, obviously advancing women's issues is going to be much harder. But we also see—and I think it's certainly the case and not accidental at all—that the recent increase in abortion politics that is taking place across the country is taking place for a very purposeful reason. It's inviting and provoking a voting response from people who not only

view that issue unfavorably because of their perspectives about sanctity of life, but also because of their perspectives about women's reproductive autonomy and what that means in terms of their patriarchal perspectives about women's place in society. Something very deep is being spoken to there and we have to work together to try to figure out how we speak to that fear and how we help to decrease it, to calm it, and to have a conversation that cuts through what the political right has been so successfully provoking in these elections.

Mary Collins: What advice do you have for young women who are looking to enter a life in public office? Can you speak to any additional barriers you have seen?

Wendy Davis: I think women face unique challenges in running for office. There's no question about that. I've spent many years demurring in answer to reporters' questions when asked about that, and actually insisting otherwise. But I think it makes sense for us to really call it what it is and to make sure that voters understand what they are responding to. Sometimes, for example, when race baiting is used in subtle ways and voters don't really understand that that's what they are unconsciously responding to, naming it makes sense. Professor López recommends we call it out and make sure that voters understand. And voters tend to not respond favorably to race baiting once it becomes a conscious part of what they see.

The same thing needs to happen in the women's arena: women candidates who are being treated differently ought

It is my responsibility ... to show other women who are considering running that my experience in this election didn't diminish my voice at all and that the things we care about are not going to go unanswered.

to call it for what it is, and make sure voters own whatever response they experience. In my mind, women who run have to enter an election with their eyes open, knowing that they will experience dog whistling. I think we have a responsibility to other women who are considering running

to bring these issues to the forefront: to show we are tough enough to endure this messaging, to call it for what it is, and to move forward with the same passion and intelligence that we otherwise would. We cannot wither in that kind of climate or under that kind of scrutiny. I take that very seriously, particularly coming out of my gubernatorial election where I was treated in a very unique way as a female candidate. It is my responsibility to continue to push forward, to continue to fight for the things that I care about, to show other women who are considering running that my experience in this election didn't diminish my voice at all and that the things we care about are not going to go unanswered.

I also know that it's important to stay in the conversation. I wasn't sure whether I wanted to stay in Austin and be the voice for what's happening in the legislature, but more and more, and whenever I went out in public, young women were coming to me and saying, "Thank you so much, please don't stop, we need your voice." That made me realize that I have something I've been called to do, and I need to own that responsibility. I'm honored to have the opportunity to represent these women.

Mary Collins: I want to emphasize that the nation was watching you stand up for what is right, and that your run for governor makes an impact on young women all over the nation. I don't live in Texas but I was following your campaign and rooting for you, and you standing up and running is important. I think there are going to be many young women—including me—who will consider raising their hands, and that's important. Keep shining on and other young women and women of all ages, colors, and backgrounds will shine as well.

Wendy Davis: I hope so. You know, government is supposed to be reflective of our population, but it won't truly be unless we see female faces and Latino faces and African American faces and Asian faces and so on in at least some reflection of the percentage of the population that we occupy. We can't expect that the things we care about are truly going to be advanced by folks who don't have our experiences, who won't fight for the things that we understand all too well. Our understanding of why they're important deserves a seat at the table.

Mary Collins: I couldn't agree more. What do you want the rest of America to know about Texans?

Wendy Davis: We are very proud people and we are very independent. I hope that when people look at Texas they won't feel that the current electoral climate is reflective of who we really are. We are just like everyone else in the country—we care about our families, we want our kids to go to good schools, we want our communities to be safe, we want to have well-paying jobs, and we want to see the generation after us do better than we were able to do. Those are our hopes and dreams. I think people get a skewed perspective of Texas, that we are all gun-toting cowboys. But we are like the rest of the country. I am very committed to making sure that the changes that so many people want to see in Texas take place, and that those of us who have been in there fighting, even when we lose, don't abandon our constituents and go somewhere where it's easy to win. I am committed to hanging in there because I know that it matters to so many people in Texas.

Mary Collins: It does. So what's next for you?

Wendy Davis: Right now I'm enjoying having the opportunity to speak around the country. I'll be speaking at several college campuses and some Planned Parenthoods and other events like that. And in the meantime I'm spending my energies and efforts putting together an advocacy organization for women, not just in Texas but elsewhere as well.

Mary Collins: Wonderful. So we can end on this one: how do you refill and refuel yourself?

Wendy Davis: I run, I do other forms of exercise. I spend time with my family. I have two daughters that I'm very, very close to and I have a wonderful man in my life as well. Spending time with the people I love is really the way that I refresh and recharge the battery.

Mary Collins: Good! That's important to do, otherwise you'll get burnt out.

Wendy Davis: And I watch episodes of *Scandal* and things like that sometimes too.

Mary Collins: Well, I hope you get to get out and about while you're here in California. We are so happy to have you here with us. Thank you so much for speaking with us today.

Mary Collins is a second-year student pursuing a Master of Public Policy at the University of California, Berkeley's Goldman School of Public Policy. She is interested in increasing diversity in public office as well as food and energy policy. Her background includes international development, agriculture, and wildlife biology. Before coming to Goldman, she served in Peace Corps Panama from 2010-2013.

A CONVERSATION WITH BARNEY FRANK

Joe Broadus and Matt Unrath

Edited by Linden Bairey

Former Congressman Barney Frank visited the Goldman School during “Stop the Clock” week, which provides students and faculty with a chance to interact with leading decision-makers who have worked in public policy and government. The following is an excerpt from a conversation between Frank and *PolicyMatters Journal* editors Joe Broadus and Matt Unrath.



Linden Bairey, Joe Broadus, Barney Frank, and Matt Unrath at the Goldman School
Bora Reed/Goldman School of Public Policy

PMJ: How has financial regulation played out over the last five years since Dodd-Frank was passed?

Barney Frank: Basically I'm happy with it. I had one serious objection: I think the move away from having the lenders be the people whom the borrowers had to pay back was very important. The move from “I lend you money, you pay me back” to “I lend you money and then I sell the right to be paid back to other people” was a serious problem, because the discipline inherent in my lending you money if I expect to be paid back dissolved. Essentially the financial incentive for lenders moved from the quality of each loan to the quantity of loans. I think that was the root of the problem, because it was loans that had higher-than-normal rates of not being paid back that were put into the securities and sold again and insured against. They were the bullets that destroyed things. And you had useless credit rating agencies, pretending to know things they didn't.

The regulators apparently believed that credit had gotten too tight, and that if there had to be risk retention [by lenders] it would be too hard for even moderate-income people to get loans. So they adopted a rule that essentially did away with risk retention for all mortgage loans. We have two categories of mortgage loans right now: those that are so crappy that you can't make them at all, and those that have no risk retention. I wanted three categories of loans: ones you can't make, ones that are so good that you don't have to have risk retention, and one in the middle. That's my one problem. Other than that, I think they've been doing fine with it and if you read the financial pages, it's having a very real impact on banks and on behavior.

PMJ: Comparing it to the ideal, where do you still see areas that need work?

Barney Frank: Well, if you had an ideal, we would have merged the Securities and Exchange Commission and the Commodities Futures Trading Commission. Given the economic and social history of America, farmers versus financiers, we couldn't do that. I regret the fact that automobile dealers had the political clout to get themselves exempted from [oversight by] the Consumer Financial Protection Bureau. But it did give us a chance to do a controlled experiment, which we rarely can do in public policy. Because that's the only area of consumer lending exempted from the Bureau, that's where all the crap is happening. All of the bad consumer finance crises have migrated to that one area that's exempt from the Bureau. So it proved that the Bureau was a very good idea.

I also wanted to mandate that you could not be required to submit to compulsory arbitration if you bought a security. And I wanted a fiduciary responsibility from financial advisors. But those are the only major ones. And there were some I didn't want in there! I don't think the Durbin amendment on credit cards has anything to do with consumers. That's between retailers and financial institutions.

PMJ: How much does financial regulation differ from other regulation? Is it unique or is it just more difficult to work on?

Barney Frank: It's more difficult in this sense: it is very arcane, it affects the average citizen in ways that he or she does not perceive, and it is opposed by very powerful and specific interests. It's a paradox: until recently—I think we put a stop to it—the opponents of financial reform had more success at chipping away at it than opponents of healthcare [reform], even though financial reform is much more popular with the general public than healthcare [reform]. The major financial players in healthcare [reform] range from supportive of it to ambivalent about it. They don't hate it; sometimes they like it. They make money off it. On the other hand, the major financial players in financial reform are against it. There are no organized interests against the healthcare bill, and therefore it's in better political shape with Congress. With financial reform, the problem is that it's very hard to mobilize support for it. What people feared, we

concluded, was that the public would stop paying attention to credit default swaps, collateralized debt obligations—all this very complicated stuff. And that's why the opponents of financial reform finally felt emboldened to take a bite out of it in the omnibus bill last year.

What was very encouraging was the angry and very widespread public reaction to it. Nancy Pelosi blew the whistle and then Elizabeth Warren jumped in. It turns out the public has not forgotten how much they dislike this kind of manipulation. As a result, I now think that the bill is secure and that Obama will not sign anything that chips away at it.

I think it has confounded both critics on the left, who said it wouldn't mean anything, and critics on the right, who said it would shut things down. The stock market has essentially tripled since we started working on the bill. Hard to argue that was fate.

PMJ: Could you talk a bit about housing more generally, and this broad question about the role of the federal government in encouraging home ownership?

Barney Frank: It was a great mistake. I was always skeptical of it. That's something I was always shouting about. I've long been skeptical of home ownership for poor people. In fact, by 1994 liberals were worried about this and in 1994—the last year the Democrats had control for twelve years—Congress passed a bill called the Home Ownership and

I think [financial reform] has confounded both critics on the left, who said it wouldn't mean anything, and critics on the right, who said it would shut things down. The stock market has essentially tripled since we started working on the bill. Hard to argue that was fate.

Equity Protection Act, which told the Federal Reserve to regulate subprime mortgages. Alan Greenspan said, "No, I won't do that. That's interference in the market." He wouldn't use the power. By the last years of the twentieth century, the early 2000s, it was clear that subprime mortgages were a problem, that people were making loans they shouldn't be making because they didn't have to worry about repay-

ment. So several states then began to adopt rules to restrict subprime mortgages—Georgia, New Jersey—and the banks complained.

We have a dual banking system in America: there are state-chartered banks and federally-chartered banks. And the Bush administration used federal constitutional power to say that no state could act to regulate a national bank. Very sweeping. There's always been the rule that a state couldn't do something that conflicted with what the federal government said, but in this case, they did something called a "field preemption." They said that no state may regulate any of the practices of a national bank that deal with banking. And that was done because states had started to regulate subprime mortgages. So when that happened, we then decided we had to pass a federal law to regulate subprime mortgages. We started working on it, and the Republican leadership killed it.

PMJ: So, the earlier attempt to regulate subprimes was more to protect homeowners.

Barney Frank: It was originally consumer protection. We came to see subprime mortgages as having negative implications for society as well—but yes, the impetus was consumer protection.

PMJ: I know you were trying to get more direct support for homeowners facing foreclosure. Could you talk about the politics of that?

Barney Frank: Yeah, they were awful. At any given time more people were paying their mortgages than not. That was why we wanted to do something about foreclosures. And by the way, not everybody who was in trouble was some poor victim. You know, I went after the banks and second mortgages, the people who bought a house and then—when the property value shot up, but not because of anything they

The Republican Party these days is in the hands of people who don't believe in government, so nothing good will happen while they're there.

did—took out a second mortgage and bought a boat. So yeah, I'm not trying to help those people; they made their choice. But it had negative economic impacts, both at the

national level and in particular the neighborhood level. So the question was about people who have mortgages and don't have enough money to pay them. The only way to keep them from being foreclosed is for somebody to come up with the money. Well, the banks were not in a position to do much. Taxpayers weren't going to. So we fiddled and diddled. What's interesting now, after the fact, is that the banks are putting up billions of dollars to help with foreclosure but in many cases they're not the same people. I'm not sure it's being administered well. There was just no way politically to resolve that. There was no political way to get the money.

PMJ: We'd like to ask you more generally about inequality, which is coming up a lot these days. Is there anything to the attention that Republicans are now giving this issue, or is it all rhetorical?

Barney Frank: It's a serious problem. I think it's the major problem that Democrats have with white working-class guys: that inequality has gotten worse, that they have been the victims. They have this expectation, they think if government really cared about a problem we could fix it, and our inability and unwillingness to try is—I think—their major problem. These are people who are anti-government not because they're philosophically Ayn Rand supporters but because they think the government let them down. Are you familiar with the song *Winchester Cathedral*? "Winchester Cathedral, you're letting me down / You didn't do nothing when my baby left town / You could have done something / You didn't do nothing." And that's their version of the government. It's exacerbated by this idea that "if we were black, or women, or gay, the government would help us out."

The single biggest thing has been the massive destruction of unions in the private sector. That was conscious public policy, without any question. Another thing that hurts: federalism. You have this state-by-state competition for industry, and that is a leveling-downward factor. You also see it with the attack on public employee compensation. Some of the pensions are out of whack, but some of it has gone too far. But it is very real, that there has been a shift towards greater inequality. America has been among the worst. I'm reading Thomas Piketty's book. And it's very clear, it has gotten worse here.

PMJ: How do you turn that around? It feels like there's a cycle where you see the government paralyzed, and that reinforces the idea that it doesn't work.

Barney Frank: You have a Democratic House, Senate, and President. People act like partisanship is a terrible thing; it's a fact of life. There is a difference between the parties. It was only with a Democratic House, Senate, and President that we got healthcare and financial reform. We repealed Don't Ask Don't Tell. We got the protection for women against wage discrimination. The Republican Party these days is in the hands of people who don't believe in government, so nothing good will happen while they're there.

PMJ: You were pretty critical of Obama early on for not being tough enough.

Barney Frank: I thought he made a big mistake in thinking he could work with the Republicans. And I would have gone with financial reform first: be confrontational, and then do healthcare. I would have done both in the first term. I think he made a mistake in thinking he could work with them. And in my opinion he never should have made a deal in which he said we'll restrict Social Security with the increase in the cost of living. You've got people who are living on \$2,000 a month in San Francisco. How the hell can you even think of restricting whether they get another ten or twenty bucks a month?

PMJ: You've mentioned unions. What else would you do to address inequality?

Barney Frank: Obama is right about the community colleges. It's short-term vs. long-term. Education is a big deal, community college is a big deal. And increase the public sector. Tax rich people more and put more money into good public sector jobs. You know, as a family gets richer, it hires people to do the gardening, do the driving, etc. Well, as a society gets richer, we can have more of us working to keep ourselves in good shape. Fix the parks. Fix transit. You can let the public sector have these decent jobs. And you do education for the longer run. And promote unions, enact a pro-union policy: unions will be able to do a lot of this themselves in the private sector in particular. The other way you address inequality is through healthcare, because it puts a major strain on people. The bigger

the percentage of healthcare costs that is either subsidized or paid for publically, the more it diminishes inequality. I'd expand Medicare, expand the Children's Health Plan. You can help more people with that.

PMJ: Do you see any opening politically for it?

Barney Frank: Yeah, that's what my book is about [*Frank: A Life In Politics from the Great Society to Same-Sex Marriage*, Farrar Straus & Giroux, 2015]. There are two groups of people who are anti-government right now. One is philosophically opposed to government. And I think the problem we have with white working-class guys is that they believe in government so strongly that they're particularly bitter that nothing good has happened to them. So I think if we could get the money—if I magically had \$50 billion at the federal level, if states and local governments had this money—they

This whole notion of thinking like a lawyer—there's no such thing as thinking like a lawyer. I went to law school. Think like an economist.

could do things with it that people would like, that would make them happy about government. Reduce student debt, that's a big part of the longer-term thing.

But you can't raise taxes when people hate the government. So there are two ways to free up existing government revenue to do the kind of things that will make the government popular. One is about a 20 percent reduction in worldwide military expenditures. People will say, well America has got to lead. Why? Why do we have to lead? Who are we leading, where are we leading them? How much is it going to cost us? Why do we have to lead, why doesn't everybody have to lead? Is that a moral obligation? Is it to protect ourselves? I think the answers are no—I think it's ego. "We're the leaders, we're the best country in the world." Well, I've been to some very nice countries: Denmark doesn't lead anybody even though it's a very well-governed country. I spell this out more in my book: tempt us not into leadership.

At the state and local level, you save an enormous amount of money by repealing the laws that say that if you get caught putting something in your mouth that we don't like, we're

going to throw you in jail. I would criminalize only the ingestion of those substances that make you much more likely to harm other people, which is not true of marijuana, heroin, or cocaine. Heroin use leads to crime because people need to steal to get it. Now drugs like PCP, angel dust, and things that are shown to increase violence are a different story. It's obviously too late—we tried and it didn't work—to ban the major substance that makes people endanger others, which is of course alcohol. But I would say there's no reason to lock

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people up because they take heroin. Cocaine is particularly hypocritical. It's an upper-class thing, there are a lot of well-functioning cocaine users in our society; people know that, and they kind of laugh at it.

And make treatment available. That has a double impact: first of all you save an incredible amount of money, not just on police and prosecution but also on prisons. And in both the military and in this area, I reject the argument that says, "Well, we'll keep doing what we're doing but we'll do it more efficiently." If you decide to go to war, you're not going to nickel and dime the people you're sending out there.

If we could do those two things we could free up tens of billions of dollars at both the federal and the state level. At the city level, we could fill in more potholes, have more firefighters, police, parks. At the federal level, we could cover more people's healthcare bills. One of the reasons health insurance costs so much is that hospitals have to make up from the paying customers what they give to the poor people who don't pay anything. So we could pay for more of the poor people's care with federal funds.

PMJ: There is some progress on policy changes for drugs, but that's happening more at the state and local level.

Barney Frank: Yeah, but it'll eventually get there. I think marijuana is like gay rights, and the trajectory will be the same, maybe a little slower because there aren't as many passionate advocates. You have something that is illegal not because it really does any harm to any non-participant, but because people disapprove of it. But they don't want to say they oppose it just because they disapprove of it. They don't want to seem like they're being puritanical—well a few do, but not the majority. So the arguments are based on negative consequences. And then, in one or two locations, these things are allowed, and what do people learn? That there are no negative consequences. And as that happens, it spreads. So I think marijuana is on the move upward in terms of legalization. And then that will spread to cocaine and heroin.

PMJ: At the same time, the politics of cutting the military budget seem pretty tough.

Barney Frank: Well, it varies. ISIL scared people, but I think military intervention is still going back to being unpopular. That's why the Republicans keep telling Obama, "Oh you can't do anything without us—but you can go make war, we don't have to vote on that," because they don't want to have to vote on it. So I think the public is ready, I think the Tea Party people are ready. Rand Paul is onto something. You cannot cut weapons systems that are in the process of being manufactured, but you can kill the new ones in the cradle. And you can cut back on American troops. I don't think there is a major constituency for keeping tens of thousands of American troops in Europe or elsewhere in the world. So you don't fire any existing military employees, but their turnover is generally six years of service. I think if you do it right, yes, there is a lot of political support. There's political support for America not leading the world. We can defend ourselves, we can contribute aid where it would be beneficial. Some of it is an isolationist thing, which I don't like, but I think there would be broad public support for scaling back American activity that is not tied to our security. There's no support for going back to Iraq or Afghanistan.

PMJ: So as our last question: you're here at a professional policy school, an institution that is training people to be policy analysts and policy leaders. What skill would you say is in shortest supply in D.C. right now?

Barney Frank: Accounting. CPAs. Is the Social Security system moving around their money or not? What are the effects of taxes? I wish I had paid more attention to accounting—I'm averse to mathematics, to economics in general. This whole notion of thinking like a lawyer—there's no such thing as thinking like a lawyer. I went to law school. Think like an *economist*. There are things that economists think that are not instinctive. For instance, the notion of opportunity cost. I would teach more economics, and particularly accounting. All these arguments are about whether things are profitable or not profitable. People hide behind accounting. So that's the major thing.

There's one course I would like people to take that doesn't exist very much: legislating, which is a very unusual kind of work that involves several hundred very ambitious people who have to work together. Now, in most of your formal relationships, you are governed by one of two principles, or sometimes both. There's hierarchy: she's the boss, and those people report to her, but then she's got the Board of Directors, and almost everybody on the Board of Directors is elected by the shareholders, and so on. Or, money: if you're willing to paint my house, I'll give you money to do it. But

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members of the legislative body have to work together and there is no hierarchy, and you're not allowed to bribe each other. The Speaker is more influential than a freshman on the other side, but nobody in the U.S. House of Representatives or the Senate may order any other Representative or Senator to do anything. That's very unusual: even with academic tenure, you can be told that you have to teach a certain course. So that's an unusual set of skills that are

required, an unusual process that I wish people knew more about. Legislating sometimes looks to people like it's pure willfulness; it's not, there's a logic to it. But I would start with accounting.

PMJ: Well, thank you so much for taking the time to sit down with us today.

Barney Frank: Thank you.

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