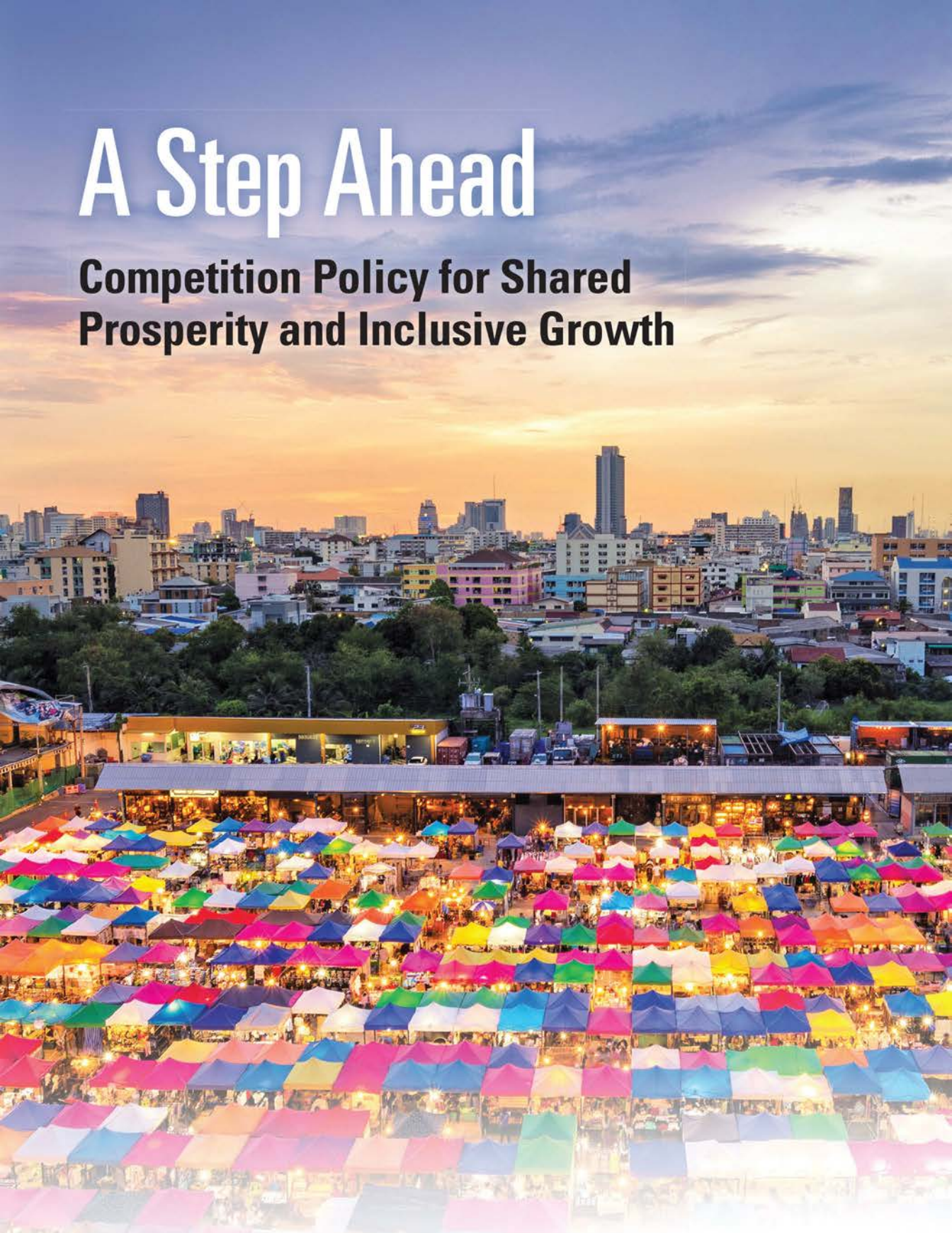
A Step Ahead

Competition Policy for Shared Prosperity and Inclusive Growth



WORLD BANK GROUP

OECD

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Competition Policy for Shared Prosperity and Inclusive Growth

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Foreword

Sustainable economic development has played a major role in the decline of global poverty in the past two decades. In emerging and developing countries, we have seen positive impacts when countries share welfare gains with the bottom 40 percent of the population.

There is no doubt that competitive markets are key drivers of economic growth and productivity. They are also valuable channels for consumer welfare. When there is competition in markets, consumers benefit from lower prices, better products and services, and innovation. Good governance, macroeconomic stability, access to infrastructure, investment in human development, and social policies to protect the poor are at the forefront of efforts to promote economic growth and shared prosperity. But are they enough to improve the welfare of the poor?

We acknowledge that competition policy is a powerful tool for complementing efforts to alleviate poverty and bring about shared prosperity. An effective competition policy involves measures that enable contestability and firm entry and rivalry, while ensuring the enforcement of antitrust laws and state aid control. Governments from emerging and developing economies are increasingly requesting pragmatic solutions for effective competition policy implementation and recommendations for procompetitive sectoral policies.

While the benefits of competition and competition policies on macroeconomic indicators and market outcomes are well documented, their short- and long-term distributional effects on the poor require enhanced research and greater attention from policy makers.

This book puts forward a research agenda that advocates the importance of market competition, effective market regulation, and competition policies for achieving inclusive growth and shared prosperity in emerging and developing economies. It is the result of a global partnership and shared commitment between the World Bank Group and the Organisation for Economic Co-operation and Development (OECD).

Part I of the book brings together existing empirical evidence on the benefits of competition for household welfare. It covers the elimination of anticompetitive practices and regulations that restrict competition in key markets and highlights the effects of competition on low-income households as consumers, small producers, and

employees. It also looks at how competition can support inclusive economic growth and sheds light on the links among competition, productivity and innovation, and macroeconomic effects.

Part II focuses on the distributional effects of competition policies and how enforcement can be better aligned with shared prosperity goals. It features novel research and empirical evidence on the impact of anticartel enforcement on consumer welfare, the distributional effects of market power, the distributional macroeconomic effects of merger and cartel decisions, and the impact of competition on innovation in developing and developed economies.

Now is the time to widely disseminate collective knowledge on the benefits of competition for economic development and shared prosperity. We hope this book will start a conversation on competition's role in poverty alleviation and help deliver better competition policy solutions for diverse audiences.

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This publication builds on the World Bank Group Global Engagement on Competition Policy for Inclusive Growth and Shared Prosperity and the proceedings of its inaugural conference, organized jointly with the OECD and held at the World Bank Group headquarters in Washington, DC, in June 2015. It also builds on the application of the World Bank Group's Markets and Competition Policy Assessment Tool in low- and middle-income countries.

The main objectives of the Global Engagement on Competition Policy were to (i) increase knowledge on how to promote efficient and contestable markets for shared prosperity; (ii) carry out a series of high-level, peer-to-peer learning events to disseminate best practices on competition policy as an instrument for poverty and shared prosperity; and (iii) prepare and release a publication that showcases empirical evidence and recent policy research on the links to competition, poverty, and shared prosperity.

The World Bank Group Competition Policy Team that led the preparation of this publication includes Georgiana Pop, Senior Economist; Martha Martinez Licetti, Lead Economist and Global Product Specialist; Sara Nyman, Economist; and Tania Priscilla Begazo Gomez, Senior Economist. Martha Martinez Licetti, Sara Nyman, and Tania Priscilla Begazo Gomez coauthored chapter 1, "Introduction," and chapter 2, "Effects of Market Competition and Competition Policies." The OECD team comprising Silvia Carrieri, Policy Analyst; John Davies, former Head of Division; and Ania Thiemann, Global Relations Manager and Competition Expert, coauthored with the World Bank Group sections on dynamic effects and further research in chapter 2, "Effects of Market Competition and Competition Policies." Tanja Goodwin, Economist, World Bank Group Trade and Competitiveness Global Practice; Mariana Iootty, Senior Economist, World Bank Group Trade and Competitiveness Global Practice; Catriona Purfield, Lead

Economist, World Bank Group Macroeconomics and Fiscal Management Global Practice; and Carlos Rodríguez-Castelán, Senior Economist, World Bank Group Poverty Global Practice, provided valuable contributions for the preparation of the report. The advice and suggestions of the peer reviewers of part I of the publication—Paul Brenton, Lead Economist, World Bank Group Trade and Competitiveness Global Practice; and Tara Vishwanath, Lead Economist, World Bank Group Poverty Global Practice—are gratefully acknowledged. Osongo Lenga, Program Assistant, World Bank Group Trade and Competitiveness Global Practice, provided support for the preparation of this publication. The final publication was edited by Martha Martinez Licetti, Georgiana Pop, Sara Nyman, Tania Priscilla Begazo Gomez, and Ania Thiemann. Steve Pazdan, publishing associate in Editorial and Production, General Services Division, coordinated production of the publication.

The team thanks the authors of the selected papers that were submitted to the Call for Proposals "Promoting Effective Competition Policies for Shared Prosperity and Inclusive Growth," notably the following: Marc Ivaldi (Toulouse School of Economics and Centre for Economic Policy Research); Frédéric Jenny (ESSEC Business School, Paris); Aleksandra Khimich (Toulouse School of Economics); Thando Vilakazi (Centre for Competition, Regulation and Economic Development, University of Johannesburg); Sean F. Ennis and Yunhee Kim (OECD); Adriaan Dierx, Fabienne Ilzkovitz, Beatrice Pataracchia, Marco Ratto, Anna Thum-Thysen, and Janos Varga (European Commission); and Tim Büthe and Cindy Cheng (Duke University and Hochschule für Politik at the Technical University of Munich, Germany). These papers were selected from 53 submissions based on a set of pre-established criteria by a committee that included representatives from the World Bank Group (Trade and Competitiveness Global Practice and the Poverty Global Practice), the OECD, and an independent academic. The team is grateful to the selection committee: John Davies, Martha Martinez Licetti, Georgiana Pop, Carlos Rodríguez-Castelán, Professor Daniel Sokol (Levin College of Law, University of Florida), Ania Thiemann, and Tara Vishwanath. Jose G. Reis, Practice Manager, Trade and Competition Unit, World Bank Group Trade and Competitiveness Global Practice; and Klaus Tilmes, Director, World Bank Group Trade and Competitiveness Global Practice, provided strategic oversight.

The publication was prepared under the guidance of Anabel González, Senior Director, Trade and Competitiveness Global Practice, World Bank Group; and Adrian Blundell-Wignall, Director, Directorate for Financial and Enterprise Affairs, OECD.

Abbreviations

ASYCUDA	Automated System for Customs Data
AT&T	American Telephone & Telegraph
CA	competition authority
CAFC	Court of Appeals for the Federal Circuit (United States)
CAN	calcium ammonium nitrate
CARICOM	Caribbean Community
CCPC	Competition and Consumer Protection Commission (Zambia)
CCRED	Centre for Competition, Regulation and Economic Development (University of Johannesburg)
CEPR	Centre for Economic Policy Research (United Kingdom)
CGE	computable general equilibrium (model)
CIF	cost, insurance, and freight
CMA	Competition and Markets Authority (United Kingdom)
COMESA	Common Market for Eastern and Southern Africa
DCG	Dar es Salaam Corridor Group
DOJ	Department of Justice (United States)
DSGE	dynamic stochastic general equilibrium (model)
ETG	Export Trading Group
EU	European Union
FDI	foreign direct investment
FISP	Farm Input Subsidy Programme (Malawi); Farmer Input Support Programme (Zambia)
FOB	free on board
FSSA	Fertiliser Society of South Africa
FTC	Federal Trade Commission (United States)
GDP	gross domestic product
GE	General Electric
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German development agency)
GNP	gross national product
IBM	International Business Machines Corp.

ICN	International Competition Network
IP	intellectual property
IPC	Import Planning Committee (South Africa)
ISCED	International Standard Classification of Education
ISIC3	International Standard Industrial Classification of All Economic Activities, Rev. 3
IT	information technology
LC	liquidity-constrained
LCC	low-cost carrier
MSP	Minimum Support Price
NACE	statistical classification of economic activities in the European Community
NBC	Nitrogen Balance Committee (South Africa)
NIRA	National Industrial Recovery Act (United States)
NLC	non-liquidity-constrained
OECD	Organisation for Economic Co-operation and Development
OFT	Office of Fair Trading (United Kingdom)
OLS	ordinary least squares
PCAIDS	Proportionally Calibrated Almost Ideal Demand System
PMR	Product Market Regulation (indicators)
PPP	purchasing power parity
R&D	research and development
SADC	Southern African Development Community
SME	small and medium enterprise
TFP	total factor productivity
TFRA	Tanzania Fertilizer Regulatory Authority
UNCTAD	United Nations Conference on Trade and Development
US$	U.S. dollars
USPTO	U.S. Patent and Trademark Office
WAEMU/UEMOA	West African Economic and Monetary Union
WDD	wealth distribution data
WGI	Worldwide Governance Indicators (World Bank)
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

5. Market Power and Wealth Distribution

Sean F. Ennis and **Yunhee Kim** (OECD)

Lack of competition can drive up prices of goods and services, with substantive negative effects for the poor, whose consumption basket is dominated by first necessity goods and services. Understanding the distributional effects of market power is important for showing the value of policies that reduce monopoly power, which yield positive effects on both growth and wealth distribution. Firms that possess market power can charge supracompetitive prices for their products and earn profits above the competitive rate of return. The impacts of these higher prices can, on net, be beneficial to holders of substantial financial assets because these holders may pay higher prices for their consumption but will receive more than a counterbalancing boost in income from the increased profits arising from their financial holdings. The increased prices will disproportionately harm the poor, who will pay more for goods without receiving a counterbalancing share of increased profits. Using new data, this study calibrates the overall impact of market power, showing a substantial impact on wealth inequality in the eight countries examined. In typical results, the share of wealth of the top 10 percent of households (by wealth) rises by 10 to 24 percent in the presence of market power. Reducing illegal or government-granted market power could reduce inequality.

5.1 Introduction

Measuring inequality has been a substantial focus of economic research in recent years, notably with the seminal work of Piketty and Saez (2003) on income inequality in the United States, and their follow-up work, along with their coauthors, to create income and wealth distribution estimates for many countries.[1] Government policies

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aimed at moderating inequality have been argued to yield potential broad-based economic benefits, with Cingano (2014) estimating that reducing inequality could augment total gross domestic product (GDP) by as much as 20 percent in some countries. In order to design appropriate government policies, though, a better understanding is needed of the potential sources of inequality. This study focuses on one potential source, monopoly power. For the purposes of this study, monopoly power, or market power, is deemed present when there is a return on capital above the competitive rate of return. Based on our model, market power can account for as much as one-quarter of the assets of the wealthiest decile of the population.

Until recently, the potential role of market power has been little considered, except by Baker and Salop (2015), and Rognlie (2015). Recent calibrations of the impact of market power on wealth distributions have not been provided, but are essential for determining whether the magnitude of the effect is substantial. Rognlie disputes Piketty's suggestion that capital share of income is increasing, proposing that increases in the capital share of income come from a residual increase in profits, which the author suggests may arise from cyclical changes in markups and market power. This argument can only enhance the relevance of this chapter's quantitative calibration of the role of market power on wealth.

Extending and updating the main quantitative approach, initially introduced and applied by Comanor and Smiley (1975), this chapter simulates how profits from market power are distributed to shareholders and provides the first calibration since 1975 (to the authors' knowledge) of the potential redistributive effects of market power.[2] This method is extended beyond the United States to include a total of eight countries. These countries were selected to ensure they covered a large share of the world's wealth, in light of data availability.

The existence of corporate market power has a dual effect, not only generating profits for companies that are above the competitive rate of return, but also imposing higher prices on consumers. The increased margins charged to customers as a result of market power will disproportionately harm the poor, who will pay more for goods without receiving a counterbalancing share of increased profits. The wealthy, while also paying more, will at the same time receive higher profits from market power, because of their generally higher ownership of the stream of corporate profits and capital gains. These market power gains are assumed to be distributed in proportion to current total business ownership claims.

Using new data, this study illustrates the overall impact of market power, showing that the disproportionate impact of market power on the poor and the wealthy—while varying from one country to another in magnitude—is substantial across the eight countries examined (Australia, Canada, France, Germany, Japan, the Republic of Korea, the United Kingdom, and the United States). In a typical result,

we find that, of the share of wealth of the top 10 percent (richest), about one-tenth to one-quarter comes from market power.

These results do not imply, and should not be taken to suggest, that the origin of wealth is always illegitimate or illegal activity. The sources of market power, for example, clearly vary, with many sources generally considered legitimate, such as pricing power originating from intellectual property and legally protected by patents, trade secrets, or trademarks. Further, policy makers may wish to reward market power that comes from being first to a market and gaining some consequent advantage, in order to ensure that companies retain a substantial incentive to innovate. At the same time, some sources of market power are considered illegitimate, such as market power coming from illegal cartels, exclusionary behavior by dominant companies, and government regulations that imbue market power on select companies, while creating undue barriers to entry for others.[3] The aggregate size of these illegitimate effects is controversial but likely nontrivial.[4] This study concludes that the extent of illegitimate market power, and wealth inequality that arises from it, can be reduced by government actions either to control the illegal origins of market power or to reduce government regulations that create or enhance market power.

The rest of this chapter is organized as follows: section 5.2 explains the model; section 5.3 explains the data; section 5.4 calibrates the impacts of market power on wealth; and section 5.5 concludes.

5.2 Model

One basic approach to assessing the impact of market power on inequality is set out in Comanor and Smiley (1975). They calculate how profits from market power transfer income from the poor to the wealth holder. The purpose of this calibration is to indicate the possible order of magnitude of the effect of market power on wealth distributions.

The assumptions underlying the model are significant and merit further discussion. There are four primary assumptions. The first is that the ratio of market power profits to GDP has remained constant over the period of the analysis (1920–2010).[5] Market power profits are those that exceed the market return on capital and arise from the difference between price and marginal cost. The second is that profits from market power have a fixed life span, being created and terminated in a steady state throughout these years. Companies gain market power and then they lose it with time, as appears to happen with technology companies that are leapfrogged by others, or as happens when profits from patents are reduced as a result of patent expiration. The third is that market power gains are distributed in proportion to current total financial wealth distribution. This reflects the observation that corporate income and capital gains

are distributed via shareholding, so that those with the largest shareholding will, in proportion, receive the largest share of the profits.[6] The fourth is that higher prices from market power will be distributed in proportion to consumption. Each unit of consumption will be inflated equally by higher prices from market power. This suggests that products for the poor and products for the wealthy will be equally affected by market power, with each unit of consumption paying more regardless of the wealth decile of the consumers.[7]

The model presented in this study yields a formula for the market power gains and the market power losses. The difference between the market power profits and the excess payments for consumption (arising from market power raising prices) for each wealth class gives a figure for the net impact of the market power. These figures are then subtracted from existing wealth positions to determine hypothetical distributions of household wealth in the absence of market power. Other determinants of the distribution remain unchanged.

We assume that total market power profits are a constant share of GDP, a, over time, with monopolies created and dying in a steady state, and the life of monopolies being constant T years. This is expressed by equation (5.1):

$$\pi_t = aGDP_t. \tag{5.1}$$

Profits for wealth class i at time t are spread out over time according to equation (5.2):

$$\pi_{it} = \sum_{n=0}^{T-1} \pi_{it(t_0-n)}. \tag{5.2}$$

In this notation, π_{it} represents the flow of aggregate excess returns in year t that come from each vintage of monopoly[8] that is yielding returns and for which the original owners were members of wealth class i. $\pi_{it}(t_0-n)$ is the annual flow of excess returns (after corporate tax) in year t due to members of the ith wealth class from monopolies created in year t_0-n. Monopolies thus generate excess returns over a period of T years from t_0-n to $t_0-n+T-1$.

We assume that the flow of excess returns due to market power is distributed in proportion to the total business ownership claims (P_i) of each wealth class i, as in equation (5.3). Stated another way, each unit of claim on business ownership has an equal probability of realizing market power gains.

$$\pi_{it} = P_i\pi_t. \tag{5.3}$$

The calibration proceeds by noting that each individual wealth class i at time t has a wealth gain and a wealth loss of V_{it} and I_{it}, respectively.

The wealth gain of wealth class i at time t, with interest rate i, taxation on capital gains for year t_0-n, and the number of years after which gains are realized in which they are taxed (m) is given by equation (5.4):[9]

$$V_{it_0} = \sum_{n=0}^{N}\left[\sum_{t=t_0-n}^{t_0-n+T-1}\frac{\pi_{it}/T}{(1+i)^j}\right](1-d_i)^n(1+i)^n\left(1-\frac{r_{t_0-n+m}}{(1-d_i)^m(1+i)^m}\right) \tag{5.4}$$

where $j \equiv t-t_0+n$ and $j = 0, 1, 2, \ldots T-1$.

The wealth foregone for wealth class i in the current year (for example, as a result of dissipation of wealth) is given by equation (5.5):

$$I_{it_0} = \sum_{n=0}^{N}\left[\pi'_{it(t_0-n)}\right]s_i(1-d_i)^n(1+i)^n \tag{5.5}$$

where s_i is the proportion of income saved by wealth class i, and d_i is the dissipation rate of accumulated wealth from the ith wealth class.

The net wealth changes combining the wealth gain and the wealth loss of wealth class i at time t is then given by equation (5.6), which will be calibrated separately for each country in the analysis:

$$V_{it_0} - I_{it_0} = \sum_{n=0}^{N}\left[(1-d_1)^n(1+i)^n\right] \left\{\frac{ap_i}{T}\left(\sum_{t=t_0-n}^{t_0-n+T-1}\frac{GNP_t}{(1+i)^j}\right)\left(1-\frac{r_{t_0-n+m}}{(1-d_i)^m(1+i)^m}\right)-ap'_i\,s_iGNP_{t_0-n}\right\}. \tag{5.6}$$

5.3 Data

A calibration of the impact of wealth distribution is made for eight countries. This section describes the variables used for the model and their underlying sources. To the extent possible, data sources have been used that are common across these countries to ensure comparability. The countries are Australia, Canada, France, Germany, Korea, Japan, the United Kingdom, and the United States. Data sources are listed in tables 5.1 and 5.2.

All figures are converted into US$ for comparability (billions), using the OECD purchasing power parity (PPP) converters. Extrapolation is made by applying the relative rates of inflation observed in different countries to the base year PPPs. GDP series in national currency and at current prices can be converted with these PPPs to yield volume measures that are comparable across countries. The resulting measures

TABLE 5.1 Definition and Sources of Variables

Variable	Definition and sources
Wealth and income	This study relies on two datasets, the Organisation for Economic Co-operation and Development (OECD) Wealth Distribution Database (first released May 21, 2015) and the OECD Income Distribution Database (first released May 21, 2015). The wealth distribution data break out financial assets.
Consumption	Consumption expenditures by *i*th class have been derived from a number of sources (see table 5.2). In light of data confidentiality limitations, we assume the *i*th wealth class coincides with the *i*th income class. While there is not a perfect overlap, we consider the overlap is likely relatively stronger at the higher income and wealth classes that are most important for this analysis.
Saving rate	The saving rate comes from OECD *National Accounts at a Glance*, equaling net saving divided by net disposable income. We assume the same saving rate for all wealth classes.
Interest rate	The interest rate comes from OECD.Stat; OECD Economic Outlook No. 96, with pre-1970 data imputed by analogy with interest rates in the United States.
Tax on capital gains	The tax on capital gains comes from OECD supplemented by Wikipedia entries where necessary. The number of years passing before tax is paid is derived from OECD sources.
Dissipation rate	The dissipation rate is assumed to be 1.7 percent, consistent with Comanor and Smiley 1975.
Average length of monopoly	The average length of monopoly, T, cannot easily be derived from data. We calibrate using a 10-year monopoly time span.
Share of GDP accounted for by market power	The share of gross domestic product (GDP) accounted for by market power is assumed to be 1 percent or 3 percent, based on calculations such as Baker 2003 and Schwartzman 1959. Considering that listed corporate profits account for 5–9 percent of GDP in countries like the United States, for example, and that market power has many origins, the order of magnitude of this figure is reasonable.

of GDP comparisons are volume indexes at constant prices and PPPs. The same result would have been achieved by applying volume growth rates of GDP to the comparative GDP levels of the base year. Table 5.2 shows selected variables by country.

5.4 Calibration of Impacts

Tables 5.3 to 5.10 each show an overview by country of business ownership, consumption distributions, and wealth distributions (net worth) in the eight countries of analysis. These are descriptive statistics, from previously identified sources or imputed from these sources.

The main results are presented in tables 5.11 to 5.18. Column 3 states the current distribution of wealth share by deciles. This distribution is empirically observed and incorporates the impact of all existing market power. In order to simulate a hypothetical distribution in the absence of any market power, one should remove from the existing distribution the impact of all market power. This is done through the formula described in equation (5.6) with a monopoly life span of 10 years.

In a typical result, the share of wealth of the top 10 percent of households (by wealth) rises by between 10 percent and 24 percent in the presence of market power. For example, in Australia (table 5.11), the wealth of the top 10 percent, assuming monopolies are 10 years, is 43 percent of wealth with no market power and 50 percent actually.

TABLE 5.2 Selected Variables and Sources, by Country

Variable	Australia	France	Germany	Japan	United Kingdom	United States	Canada	Korea, Rep.
GNP/GDP	OECD datasets: GDP Gross National Income 1950–2013 Gross Domestic Product 1950–2013 in national currency and current prices							
Standard year—the year of the Antitrust Act (N)	2010–1920							
Monopoly profits ratio to GNP/GDP (a) – 3%, 2%	Estimation coming from Comanor and Smiley 1975; Scherer 1975, 409							
Interest rate (i)	OECD datasets: OECD Economic Outlook No. 96 Long-term interest rate on government bonds 1970–2014 OECD Economic Outlook No. 96 Short-term interest rate 1970–2014							
Wealth distribution (p_i) = financial wealth; net worth (Wi) = financial + nonfinancial liabilities	OECD datasets: Wealth distribution data (WDD) by decile from STD/HSPM (OECD 2015)							
Consumption expenditures (p'_i)	Consumption expenditures of households by income quintile for 2009–10 Source: Australian Bureau of Statistics: Household Expenditure Survey 2009–10	Consumption expenditures of households by income decile Source: Eurostat	Consumption expenditures of households by income decile Source: Eurostat	Consumption expenditures of households by income decile Source: Eurostat	Average weekly household expenditure by gross income decile group for 2011 and 2013 Source: Office for National Statistics, U.K.	Average annual expenditure by income quintiles Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Survey	Statistics Canada; Survey of Household Spending 2012, Table 2	Average annual expenditure by income quintiles, kostat.go.kr: Korean Statistical Information Service website
Saving rates (si)	OECD disposable income and net lending-net borrowing dataset	OECD dataset: OECD *National Accounts at a Glance 2013* household net saving 1998–2011	OECD disposable income and net lending-net borrowing dataset	OECD disposable income and net lending-net borrowing dataset	Institute for Fiscal Studies "Wealth and Saving of UK Families 2000–2005," 47	OECD disposable income and net lending-net borrowing dataset		
Dissipation rate (d_i)	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%	1.7%
Capital gain taxation $rt_0 - n + m$	Source: Harding 2013	Source: Harding 2013	Source: Harding 2013	Source: Harding 2013	Source: Harding 2013	Source: Harding 2013	Source: Harding 2013	Source: Harding 2013

Note: GDP = gross domestic product; GNP = gross national product; OECD = Organisation for Economic Co-operation and Development.

TABLE 5.3 **Australia: Existing Distributions of Business Ownership, Consumer Expenditures, and Net Worth, by Wealth Decile**

Wealth decile	Percentage of business ownership claims (p_i)	Percentage of consumer expenditures (p'_i)	Percentage of net worth (w_0)	Number of households (WDD)
Poorest	0.32	4.54	0.20	839,850
2	0.32	4.54	0.60	839,850
3	1.53	6.57	1.90	839,850
4	1.53	6.57	3.00	839,850
5	2.39	9.46	4.70	839,850
6	2.39	9.46	6.00	839,850
7	5.23	11.97	7.70	839,850
8	5.23	11.97	10.30	839,850
9	9.08	17.47	15.10	839,850
Richest	68.61	17.47	50.40	839,850
Total	**97.00**	**100.00**	**100.00**	**8,398,500**

Note: WDD = wealth distribution data.

TABLE 5.4 **Canada: Existing Distributions of Business Ownership, Consumer Expenditures, and Net Worth, by Wealth Decile**

Wealth decile	Percentage of business ownership claims (p_i)	Percentage of consumer expenditures (p'_i)	Percentage of net worth (w_0)	Number of households (WDD)
Poorest	0.13	3.97	0.00	1,351,401
2	0.13	3.97	0.30	1,351,401
3	0.97	5.77	0.30	1,351,401
4	0.97	5.77	1.60	1,351,401
5	2.66	8.49	2.60	1,351,401
6	2.66	8.49	4.60	1,351,401
7	6.54	11.68	6.90	1,351,401
8	6.54	11.68	10.30	1,351,401
9	14.70	20.09	15.80	1,351,401
Richest	64.69	20.09	57.70	1,351,401
Total	**100.00**	**100.00**	**100.00**	**13,514,009**

Note: WDD = wealth distribution data.

TABLE 5.5 **France: Existing Distributions of Business Ownership, Consumer Expenditures, and Net Worth, by Wealth Decile**

Wealth decile	Percentage of business ownership claims (p_i)	Percentage of consumer expenditures (p'_i)	Percentage of net worth (w_0)	Number of households (WDD)
Poorest	0.28	4.49	0.10	2,852,400
2	0.28	5.40	0.30	2,852,400
3	1.78	6.52	0.60	2,852,400
4	1.78	7.39	1.10	2,852,400
5	3.60	8.53	1.80	2,852,400
6	3.60	9.80	3.90	2,852,400
7	5.96	11.32	5.70	2,852,400
8	5.96	12.54	8.90	2,852,400
9	12.28	14.67	14.90	2,852,400
Richest	64.49	19.33	62.70	2,852,400
Total	**100.00**	**100.00**	**100.00**	**28,524,000**

Note: WDD = wealth distribution data.

TABLE 5.6 **Germany: Existing Distributions of Business Ownership, Consumer Expenditures, and Net Worth, by Wealth Decile**

Wealth decile	Percentage of business ownership claims (p_i)	Percentage of consumer expenditures (p'_i)	Percentage of net worth (w_0)	Number of households (WDD)
Poorest	0.32	3.80	0.00	3,864,200
2	0.32	4.79	0.00	3,864,200
3	1.31	5.99	0.20	3,864,200
4	1.31	7.07	0.70	3,864,200
5	4.21	8.28	1.50	3,864,200
6	4.21	9.56	3.40	3,864,200
7	6.75	11.09	6.40	3,864,200
8	6.75	12.78	11.50	3,864,200
9	12.34	15.37	16.30	3,864,200
Richest	62.57	21.28	60.70	3,864,200
Total	**100.00**	**100.00**	**101.00**	**38,642,000**

Note: WDD = wealth distribution data

TABLE 5.7 **Japan: Existing Distributions of Business Ownership, Consumer Expenditures, and Net Worth, by Wealth Decile**

Wealth decile	Percentage of business ownership claims (p_i)	Percentage of consumer expenditures (p'_i)	Percentage of net worth (w_0)	Number of households (WDD)
Poorest	0.30	5.60	0.40	48,536
2	0.70	6.53	1.40	48,536
3	1.60	7.55	2.40	48,536
4	2.80	8.44	3.40	48,536
5	4.30	8.94	4.60	48,536
6	6.00	9.75	6.00	48,536
7	8.10	11.11	8.00	48,536
8	10.90	11.92	11.10	48,536
9	16.30	13.24	16.40	48,536
Richest	49.10	16.92	46.20	48,536
Total	**100.00**	**100.00**	**100.00**	**485,360**

Note: WDD = wealth distribution data.

TABLE 5.8 **Republic of Korea: Distributions of Business Ownership, Consumer Expenditures, and Net Worth, by Wealth Decile**

Wealth decile	Percentage of business ownership claims (p_i)	Percentage of consumer expenditures (p'_i)	Percentage of net worth (w_0)	Number of households (WDD)
Poorest	0.00	4.25	0.00	1,795,068
2	0.20	5.96	0.20	1,795,068
3	1.20	7.26	1.20	1,795,068
4	2.10	8.49	2.10	1,795,068
5	3.30	9.24	3.30	1,795,068
6	4.50	10.38	4.50	1,795,068
7	6.50	10.86	6.50	1,795,068
8	8.80	12.62	8.80	1,795,068
9	13.00	13.80	13.00	1,795,068
Richest	60.70	17.13	60.70	1,795,068
Total	**100.00**	**100.00**	**100.00**	**17,950,675**

Note: WDD = wealth distribution data.

TABLE 5.9 United Kingdom: Existing Distributions of Business Ownership, Consumer Expenditures, and Net Worth, by Wealth Decile

Wealth decile	Percentage of business ownership claims (p_i)	Percentage of consumer expenditures (p'_i)	Percentage of net worth (w_0)	Number of households (WDD)
Poorest	0.23	5.42	0.10	2,632,300
2	0.23	5.47	0.30	2,632,300
3	1.12	6.22	1.10	2,632,300
4	1.12	7.37	2.40	2,632,300
5	2.40	8.52	3.90	2,632,300
6	2.40	9.68	5.50	2,632,300
7	5.81	10.21	7.70	2,632,300
8	5.81	12.37	10.40	2,632,300
9	12.81	14.48	15.70	2,632,300
Richest	68.06	20.28	53.00	2,632,300
Total	**100.00**	**100.00**	**100.00**	**26,323,000**

Note: WDD = wealth distribution data.

TABLE 5.10 United States: Existing Distributions of Business Ownership, Consumer Expenditures, and Net Worth, by Wealth Decile

Wealth decile	Percentage of business ownership claims (p_i)	Percentage of consumer expenditures (p'_i)	Percentage of net worth (w_0)	Number of households (WDD)
Poorest	0.10	4.31	0.00	12,110,700
2	0.10	4.31	0.00	12,110,700
3	0.16	6.34	0.20	12,110,700
4	0.16	6.34	0.50	12,110,700
5	0.57	8.35	1.10	12,110,700
6	0.57	8.35	2.00	12,110,700
7	2.20	11.64	3.50	12,110,700
8	2.20	11.64	6.00	12,110,700
9	7.24	19.36	11.70	12,110,700
Richest	86.69	19.36	76.00	12,110,700
Total	**100.00**	**100.00**	**101.00**	**121,107,000**

Note: WDD = wealth distribution data.

TABLE 5.11 Australia: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
Poorest	839,850	0.20	0.38
2	839,850	0.60	0.88
3	839,850	1.90	2.23

(Table continues on the following page.)

TABLE 5.11 **Australia: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile *(continued)***

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
4	839,850	3.00	3.60
5	839,850	4.70	5.60
6	839,850	6.00	7.22
7	839,850	7.70	8.60
8	839,850	10.30	11.83
9	839,850	15.10	16.91
Richest	839,850	50.40	42.74
Total	**8,398,500**	**100.00**	**100.00**

TABLE 5.12 **Canada: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile**

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
Poorest	1,351,401	0.00	0.39
2	1,351,401	0.30	0.92
3	1,351,401	0.30	0.40
4	1,351,401	1.60	2.69
5	1,351,401	2.60	3.30
6	1,351,401	4.60	6.83
7	1,351,401	6.90	7.82
8	1,351,401	10.30	13.83
9	1,351,401	15.80	17.31
Richest	1,351,401	57.70	46.51
Total	**13,514,009**	**100.00**	**100.00**

TABLE 5.13 **France: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile**

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
Poorest	2,852,400	0.10	0.45
2	2,852,400	0.30	0.85
3	2,852,400	0.60	0.49
4	2,852,400	1.10	1.34
5	2,852,400	1.80	1.39
6	2,852,400	3.90	4.70

(Table continues on the following page.)

TABLE 5.13 France: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile *(continued)*

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
7	2,852,400	5.70	6.13
8	2,852,400	8.90	11.10
9	2,852,400	14.90	16.50
Richest	2,852,400	62.70	57.05
Total	**28,524,000**	**100.00**	**100.00**

TABLE 5.14 Germany: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
Poorest	3,864,200	0.00	0.26
2	3,864,200	0.00	0.40
3	3,864,200	0.20	0.03
4	3,864,200	0.70	1.05
5	3,864,200	1.50	0.03
6	3,864,200	3.40	3.52
7	3,864,200	6.40	6.68
8	3,864,200	11.50	15.81
9	3,864,200	16.30	19.53
Richest	3,864,200	60.70	52.69
Total	**38,642,000**	**100.00**	**100.00**

TABLE 5.15 Japan: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
Poorest	48,536	0.40	1.52
2	48,536	1.40	3.08
3	48,536	2.40	4.18
4	48,536	3.40	4.98
5	48,536	4.60	5.75
6	48,536	6.00	6.76
7	48,536	8.00	8.54
8	48,536	11.10	11.48
9	48,536	16.40	15.92
Richest	48,536	46.20	37.79
Total	**485,360**	**100.00**	**100.00**

TABLE 5.16 Republic of Korea: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
Poorest	1,795,068	0.00	1.09
2	1,795,068	0.20	1.67
3	1,795,068	1.20	2.75
4	1,795,068	2.10	3.73
5	1,795,068	3.30	4.81
6	1,795,068	4.50	5.99
7	1,795,068	6.50	7.60
8	1,795,068	8.80	9.76
9	1,795,068	13.00	13.18
Richest	1,795,068	60.70	49.42
Total	**17,950,675**	**100.00**	**100.00**

TABLE 5.17 United Kingdom: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
Poorest	2,632,300	0.10	0.09
2	2,632,300	0.30	0.41
3	2,632,300	1.10	1.15
4	2,632,300	2.40	3.21
5	2,632,300	3.90	4.83
6	2,632,300	5.50	7.35
7	2,632,300	7.70	8.83
8	2,632,300	10.40	13.09
9	2,632,300	15.70	17.35
Richest	2,632,300	53.00	43.70
Total	**26,323,000**	**100.00**	**100.00**

TABLE 5.18 United States: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
Poorest	12,110,700	0.00	0.18
2	12,110,700	0.00	0.18
3	12,110,700	0.20	0.60

(Table continues on the following page.)

TABLE 5.18 **United States: Impacts of Market Power with Varying Monopoly Life Span, by Wealth Decile *(continued)***

Wealth decile	Households	Current wealth share (%) (W_0)	Wealth share with no market power (%)
4	12,110,700	0.50	1.12
5	12,110,700	1.10	1.95
6	12,110,700	2.00	3.50
7	12,110,700	3.50	4.97
8	12,110,700	6.00	9.28
9	12,110,700	11.70	15.53
Richest	12,110,700	76.00	62.70
Total	**121,107,000**	**100.00**	**100.00**

Wealth classes used in this chapter are deciles because these are most easily reported or imputed from the reported data. Future refinements would include a greater focus on the top 1 percent of the population.

The poorest households start with almost zero in the distribution of wealth. Based on the model, it is possible to estimate how wealth class 1 (the poorest) has lost money (wealth) because of existing market power. The first wealth class receives a very small share of the profits from market power (0.1 percent) because their share in business ownership claims is very low. In addition, since they represent a higher share in consumption expenditures, they transfer much of their income to monopoly owners because of their excess payments (the higher prices for the goods produced by monopolies). At the end, the impact of market power for them is a high negative figure (they lose much more than they win). This is why, in the hypothetical distribution of wealth in the absence of monopolies (column 4 in tables 5.11 to 5.18), instead of zero, they get a positive share of total wealth. Without market power, the bottom of the wealth class would be wealthier. These results are then presented for a 10-year monopoly life span in figures 5.1 to 5.8 in order to show the impact of reducing market power across wealth classes.

According to these calibrations, market power may increase the wealth of the top wealth class by 10–24 percent, depending on the country and monopoly life span. For example, in table 5.11 for Australia, wealth shares of the top decile are 50 percent. Absent market power, the wealth shares would fall to between 42 and 45 percent. As the summary table 5.19 suggests, assuming a 10-year life span of market power, of the countries examined, France has the lowest impact (10 percent) whereas Canada, Japan, Korea, the United Kingdom, and the United States have the largest (ranging between 21 and 24 percent). The differences in the impact of market power arise from the

FIGURE 5.1 Australia: Illustration of Impact of Monopoly, by Wealth Decile

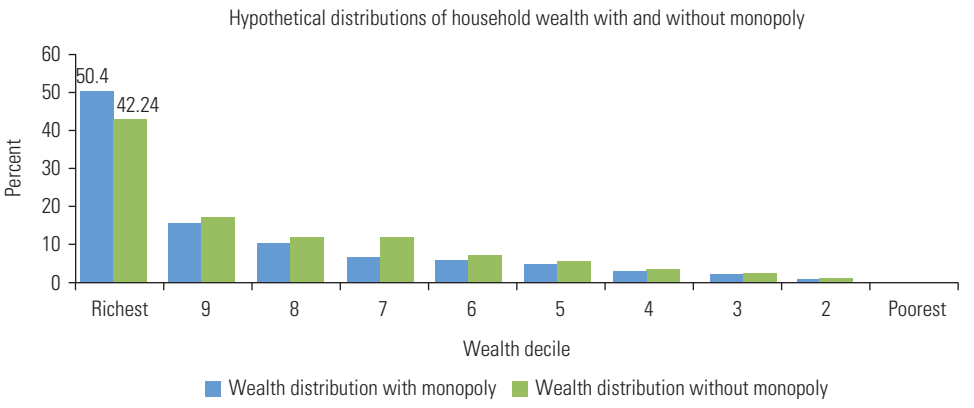

FIGURE 5.2 Canada: Illustration of Impact of Monopoly, by Wealth Decile

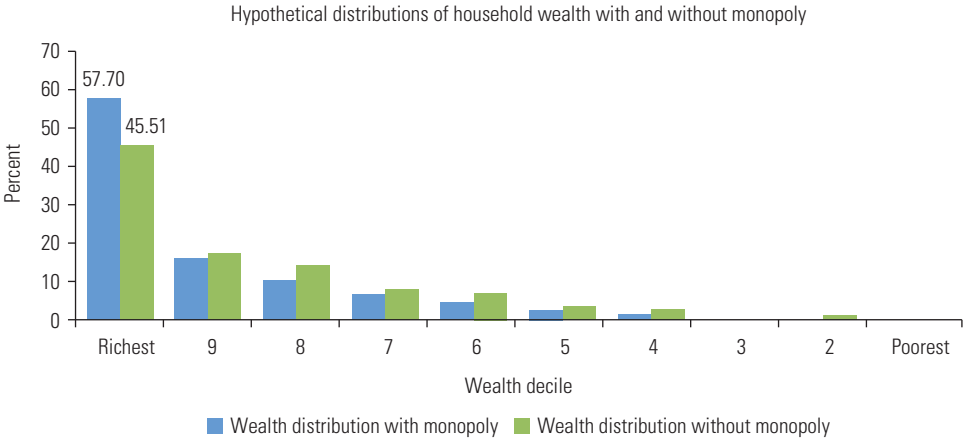

FIGURE 5.3 France: Illustration of Impact of Monopoly, by Wealth Decile

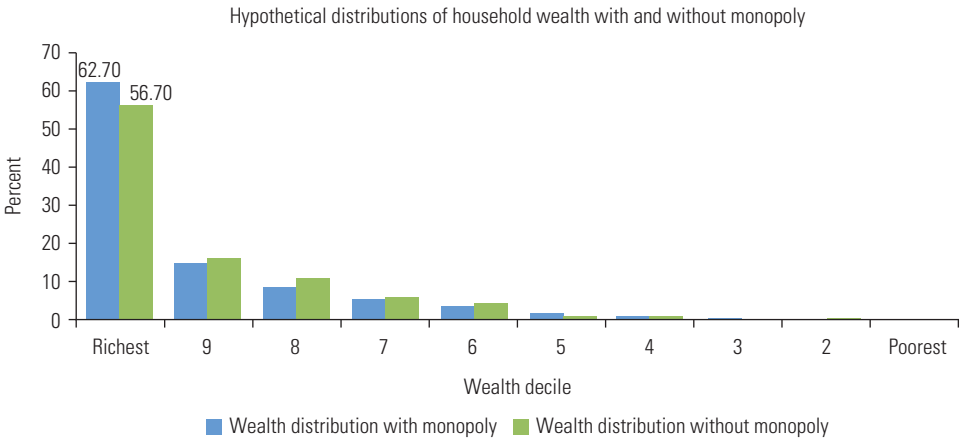

FIGURE 5.4 Germany: Illustration of Impact of Monopoly, by Wealth Decile

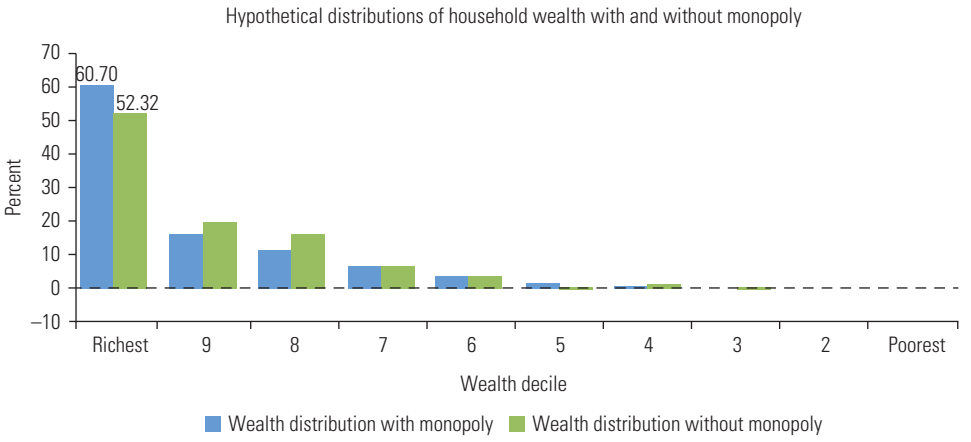

FIGURE 5.5 Japan: Illustration of Impact of Monopoly, by Wealth Decile

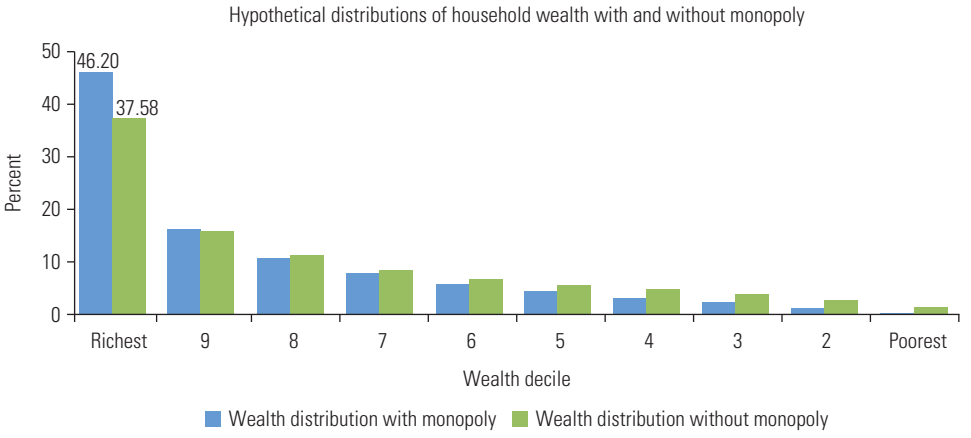

FIGURE 5.6 Republic of Korea: Illustration of Impact of Monopoly, by Wealth Decile

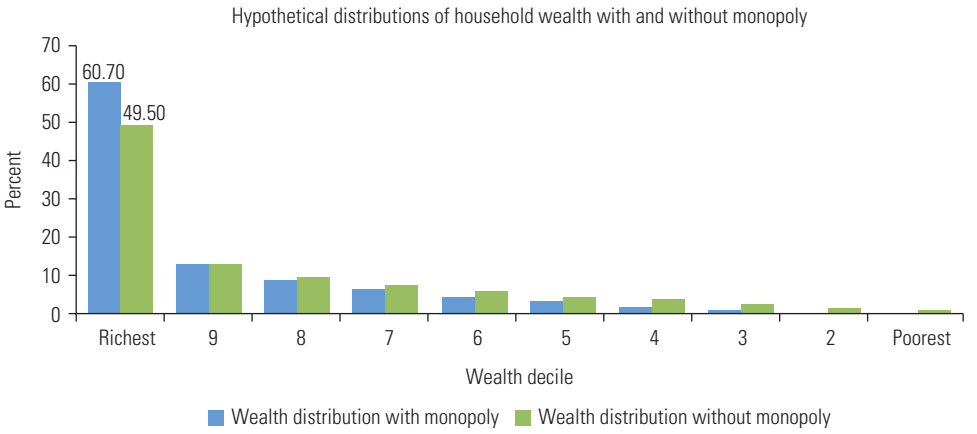

FIGURE 5.7 **United Kingdom: Illustration of Impact of Monopoly, by Wealth Decile**

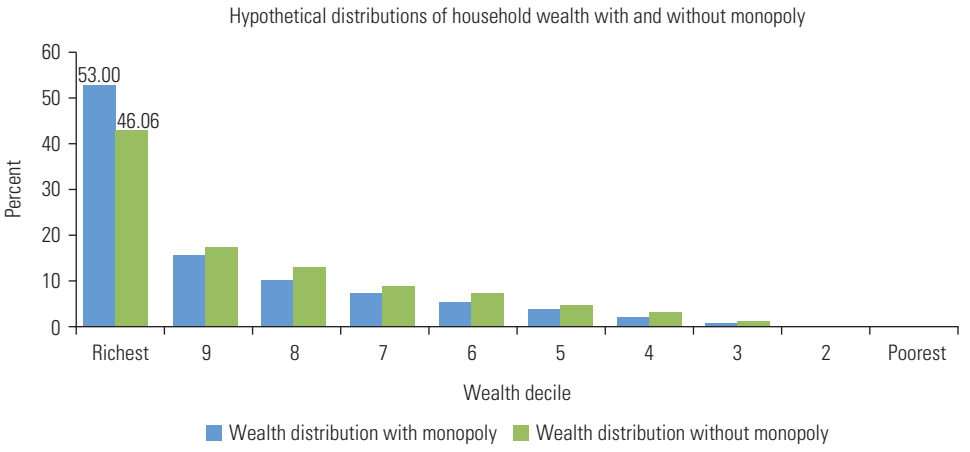

FIGURE 5.8 **United States: Illustration of Impact of Monopoly, by Wealth Decile**

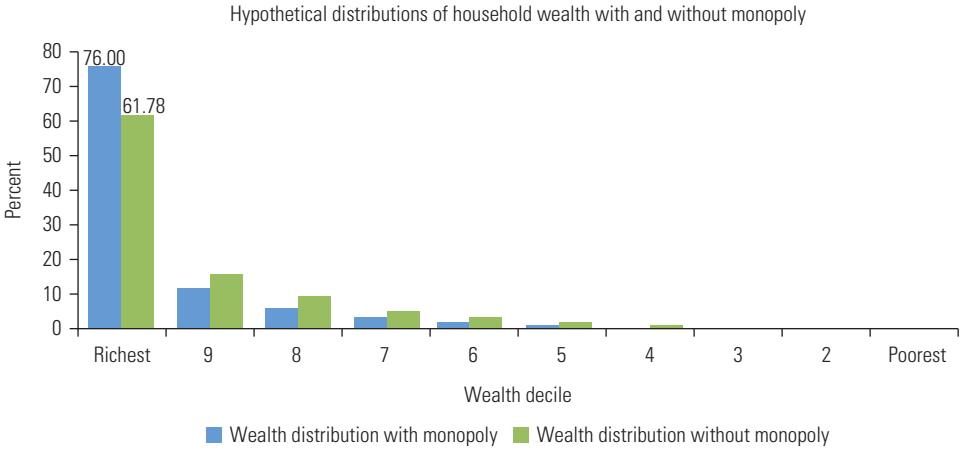

TABLE 5.19 **Comparative Impacts of Market Power in the Eight Countries of Analysis**
Percent

Country	Actual wealth share of top decile (A)	Wealth share of top decile with no market power (B)	Impact of market power (A–B)/B
Australia	50.4	42.7	17.9
Canada	57.7	46.5	24.1
France	62.7	57.1	9.9
Germany	60.7	52.7	15.2
Japan	46.2	37.8	22.3
Korea, Rep.	60.7	49.4	22.8
United Kingdom	53.0	43.7	21.3
United States	76.0	62.7	21.2

combination of interest rates, saving rates, and capital taxation that affect the people earning monopoly profits.

Sensitivity analyses have been conducted to see the impact of reducing the size of economywide impacts from market power. These find that a reduction to 1 percent from 3 percent does not yield a proportionate decrease in the impact of market power.

The assumption of constant market power as a percentage of GDP was used by Comanor and Smiley (1975). In this selection of countries, we recognize that there are reasons to think that the percentage could reasonably have changed in some cases, for example, through creation of a competition law enforcement regime, through changing political regimes, or changing technology. The results should therefore be considered as tentative and suggest the value of future work that would allow market power's share of GDP to change over time.

5.5 Conclusions and Policy Implications

Policy makers are interested in learning about actions they can take to enhance wealth equality. In order to create targeted policies for reducing inequality, they need evidence about the origins of the inequality. This chapter extends the existing work on the origins of inequality, specifically focusing on the role of market power.

This chapter has found that, under various parameters, and for a variety of countries, market power may account for a substantial amount of wealth inequality, with market power accounting for between 10 and 24 percent of the wealth of the wealthiest class. The method used has received remarkably little attention since its origin with Comanor and Smiley (1975). While sources of market power vary, and many are generally considered legitimate, such as intellectual property protection for products, processes, or brands, significant sources of market power are violations of competition law or government-created barriers to entry. By reducing market power with such origins, either through enhancing enforcement of competition law or reviewing and revising excessively restrictive government regulations, wealth inequality itself may decline. That is, policy makers can take actions to reduce wealth inequality apart from direct redistributive mechanisms with their distortionary and incentive-blunting impacts.

Future research is needed. First, increasing the extent to which relevant data from developing countries is included in the model would enhance the breadth of results. This should be possible, as the quality of data measuring inequality is rapidly increasing. Second, newer and updated work is needed on different sources of market power, ideally divided into at least three categories: legally obtained without government help, legally obtained with government help (for example, due to competition-restricting regulations), and illegally obtained market power. Such figures would provide an underpinning for one of the key variables for this analysis.

Third, accuracy of certain parameters may be improved through access to survey or tax data. Fourth, increasing the focus on the top 1 percent of the wealth distribution would be informative, given the high concentration of wealth among the top decile that falls under the top 1 percent. Fifth, estimating confidence intervals for these figures would be of substantial value by providing a greater sense of the potential range of reasonable calibrations.

To avoid misinterpretation, it is worth emphasizing that this study does not argue that market power is harmful in and of itself. Many sources of market power yield economic benefits, stimulating innovation and investment. Specific benefits may include intellectual property, first-mover advantages, and network effects.

The results are nonetheless suggestive. Illegitimate market power, which is frequently considered harmful for consumers in the long run, is a substantial contributor to overall market power. Consequently, government action to limit illegitimate market power may enhance equality of wealth distributions.

Notes

1. For the most unified treatment, see Piketty 2014.
2. Urzúa (2013) estimates the extent to which the poor and rural populations in Mexico may be disproportionately affected if there is market power in certain goods, but does not estimate the link to wealth nor characterize the extent of market power for these goods.
3. See Peltzman 1976.
4. While the scale of this effect is not studied here, initial estimates of the size of commerce affected by international cartels, from 1990 to 2013, are up to US$48.5 trillion (Ennis 2014), suggesting that the illegal market power effects may be nontrivial. Baker (2003) suggests that the beneficial effect of competition law enforcement is conservatively estimated at 1 percent of GDP in line with the work by Crandall (1991).
5. This assumption makes the formulas tractable and provides an approximation intended to suggest the rough level of profits from market power; in practice, the figures may change over time, such as when there are major technological changes or when competition laws are introduced.
6. Market power may potentially be shared with employees, including lesser-paid workers. Notably, if the workers receive a substantial increase in their incomes as a result of market power, the distribution of profits will go not only to those with substantial financial wealth but also to those without, thus weakening the result presented in this study. While this point is important to consider, to the extent that union negotiating power has declined over time, and that top management pay has substantially outpaced inflation, redistribution via labor income, to the extent it occurs, may accrue increasingly to the wealthiest workers (that is, management) in current times.
7. While the population of the top wealth decile and top consumption decile are not perfectly overlapping, the authors believe there is a high correlation between consumption shares of the income for those persons in the xth wealth decile and those in the xth income decile. This approximation is used because data on the consumption shares of the top wealth decile were unavailable to the authors at the time of writing.
8. The term monopoly is here used as shorthand to indicate market power in the context of life span in which companies have market power.
9. Note that this equation does not account for the redistribution of taxes on the wealthy to the poor.

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