

Exploring the Incorporation Decision in Bangladesh: The Influence of Regulatory Delays, Bribery, and Informal Sector

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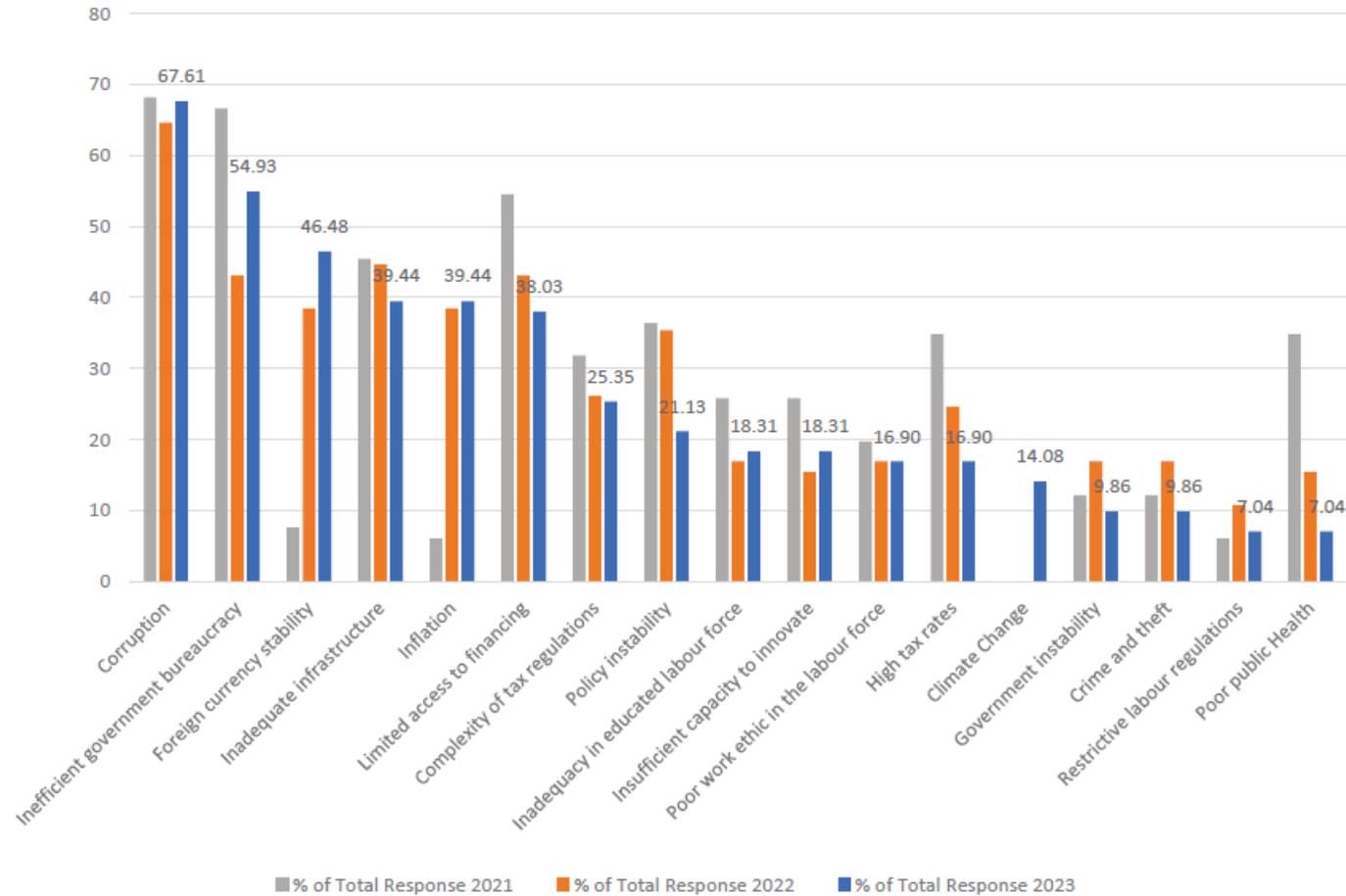
1. Introduction

- A firm's legal form influences various aspects of the firm, including financial resources, tax obligations, and asset protection (Khurana et al., 2021).
- Incorporated firms possess a separate legal identity, and centralized management, enabling more efficient contracting and smoother ownership transfers (Winton, 1993).
- Incorporation can streamline investment by mitigating information asymmetry between businesses and lenders.
- Incorporated firms grow faster than unincorporated firms (Harhoff et al., 1998).
- A country's legal structure and the quality of its institutions significantly impact corporate financing and organizational choices (La Porta et al., 1998, 1999, 2000, 2003).

2. Motivation

- Prior studies (e.g. Demirguc-Kunt et al., 2006; Baik et al., 2015) have focused on industry level or cross-country analyses, often overlooking the micro-level impacts of corruption and regulation on legal form.
- Bangladesh grapples with widespread corruption, and yet paradoxically it seems to facilitate business operations in a heavily regulated environment (Paul, 2010).
- Asadullah and Chakravorti (2019) highlights that bribes constitute a significant cost for businesses, particularly in the manufacturing sector.
- Bangladesh's large informal sector, which accounts for more than 80% of its labor force, poses a challenge to formal enterprises.
- In the first half of FY 2023-24, approximately **4,516 companies**, including public, private, OPCs, and partnership firms, were newly registered, as opposed to **8,314 new registrations** during the same period in the previous year.

2. Motivation



Source: Centre for Policy Dialogue (2023)

Research Objectives

- Predict the causal impacts of bribery, regulation, and competition from the informal sector on a firm's choice of legal form and decision to incorporate.
- Predict whether incorporation is associated with fewer obstacles reported by firms in terms of corruption, informal competition, tax rates, tax administration, licensing and permits, and the courts system.

3. Data

- Firm-level data from the World Bank Enterprise Survey (WBES) for Bangladesh.
- Three rounds of data (2007, 2013, and 2022) pooled together.
- The WBES covers small, medium, and large firms, categorized by the number of employees: 5 to 19 (small), 20 to 99 (medium), and 100 or more (large).
- The surveys provide a representative sample of enterprises in the non-agricultural, formal, private sector.

3. Variables

3.1 Outcome variables

- Legal form of organization
 - Shareholding Company with Publicly Traded Shares
 - Shareholding Company with Privately Traded Shares
 - Sole Proprietorship
 - Partnership
- Incorporation dummy
 - 1 if firm has issued publicly or privately traded shares
 - 0 if firm is sole proprietorship or partnership

3. Variables

3.2 Explanatory variables

- Senior management's time spent on dealing with regulations in a typical week
- Average number of days taken to obtain various permits and amenities over last two years
 - Water connection
 - Electricity connection
 - Construction permits
 - Operating license
 - Import license

3. Variables

3.2 Explanatory variables

- Total bribe paid by the firm annually (in log)
- Bribery depth
 - Water connection
 - Electricity connection
 - Construction permits
 - Operating license
 - Import license
 - Tax official
 - Government contract

3. Variables

3.2 Explanatory variables

- Informal competitors
 - 1 if firm has reported it competes with the informal sector
 - 0 otherwise

4. Descriptive Statistics

	Sole Proprietorship	Partnership	Private Limited Company	Public Limited Company
<i>Firm characteristics</i>				
Manufacturing	.686	.69	.903	.892
Services	.243	.245	.066	.108
Small	.609	.409	.164	.081
Medium	.257	.301	.186	.144
Large	.134	.29	.65	.775
Managerial experience (years)	18.341	19.293	17.347	20.861
Credit access	.411	.421	.672	.781
Firm age (years)	19.601	21.033	19.133	27.963
Foreign ownership	.005	.014	.051	.171
Exporter status	.108	.25	.571	.514

4. Descriptive Statistics

	Sole Proprietorship	Partnership	Private Limited Company	Public Limited Company
<i>Regulation and permits</i>				
Average waiting days	17.647	24.914	12.81	16.379
Management time spent on regulation	6.39	9.128	5.832	7.812

4. Descriptive Statistics

	Sole Proprietorship	Partnership	Private Limited Company	Public Limited Company
<i>Bribery and informality</i>				
Electricity connection bribe	.343	.391	.404	.5
Water connection bribe	.478	.167	.389	.5
Construction permit bribe	.311	.313	.426	.364
Import license bribe	.436	.679	.527	.531
Operating license bribe	.352	.448	.388	.429
Government contract bribe	.959	.974	.957	.883
Tax official bribe	.247	.336	.353	.274
Total bribe (in log)	9.511	10.481	11.213	11.778
Bribery depth	.179	.190	.262	.229
Informal competitors	.413	.34	.18	.208

5. Empirical Strategy

5.1 Basic model specifications

$$\text{Incorporation} = f(\text{firm characteristics, regulation, corruption, informal competition}) \quad (1)$$

$$\text{Legal_form} = f(\text{firm characteristics, regulation, corruption, informal competition}) \quad (2)$$

$$\text{Obstade} = f(\text{incorporation, firm characteristics}) \quad (3)$$

Specification (1) is estimated using probit model, and specifications (2) and (3) are estimated using ordered probit model.

5. Empirical Strategy

5.2 Methodological issues

- Reverse causality may exist between incorporation and several explanatory variables such as regulation and bribery.
- We may find positive coefficients if we simply regress them, but that will not give us the true causal impact on the outcome variables.
- Unobservable firm characteristics could influence the choice of legal form, posing a risk of omitted variable bias.
- Variables are based on self-reported data, significant measurement errors could lead to attenuation bias.

5. Empirical Strategy

5.2 Methodological issues

- Average response of all other firms (excluding the firm in question) within the same "cell" as proxies.
- A cell can be defined based on location, industry, firm size, and other factors.
- This strategy, discussed and used in several studies (e.g., Dollar et al., 2006; Fisman and Svensson, 2007; De Rosa et al., 2010; Aterido et al., 2011; Amin and Soh, 2020), helps to overcome endogeneity concerns.
- Prior studies have also used cell averages as instrumental variables (Amin, 2021).

5. Empirical Strategy

5.3 Choice of instrumental variables

- What is a cell average?

Firm ID	Industry ID	Waiting days	Cell average
1	1	5	15
2	1	10	12.5
3	1	20	7.5

5. Empirical Strategy

5.3 Choice of instrumental variables

- We define three cells: industry, region, and firm size.
- Industry is defined at the 2-digit ISIC Rev. 3.1 level, and region is defined at the divisional level in the WBES.
- For average waiting days and bribery variables, we use the cell average of all other firms within the same region and industry as instruments.
- For the time spent on regulation and informal competition, we use the cell average of all other firms of the same size.

6. Results and Discussion

6.1 Predicting the choice of incorporation

- All the independent variables have a positive and statistically significant association with firm incorporation.
- Odds of being classified as a corporation have declined over the years, as evidenced by the negative and statistically significant coefficients for both 2013 and 2022 (2007 being the base year).

	Coef.	Std. Error	t-value	p-value	[95% Conf Interval]	
Dependent variable: Incorporation dummy						
Manufacturing	.205*	.106	1.93	.053	-.003	.413
Services	.438***	.158	2.78	.006	.129	.747
Medium	.831***	.088	9.43	.000	.658	1.003
Large	1.333***	.084	15.94	.000	1.169	1.497
Managerial experience	.009***	.003	3.12	.002	.003	.015
Credit access	.32***	.057	5.59	.000	.208	.432
Foreign ownership	1.008***	.222	4.55	.000	.574	1.443
Exporter status	.546***	.068	8.00	.000	.413	.68
Age	.004**	.002	2.17	.03	0	.008
2013	-1.232***	.071	-17.28	.000	-1.372	-1.092
2022	-1.837***	.118	-15.51	.000	-2.07	-1.605
Constant	-1.438***	.116	-12.43	.000	-1.664	-1.211

*** $p < .01$, ** $p < .05$, * $p < .1$

6. Results and Discussion

6.1 Predicting the choice of incorporation

- Average waiting days and time spent on regulation have no impact on incorporation.
- Total bribes paid and bribery depth has a positive and statistically significant impact on the likelihood of being incorporated.
- The presence of informal competitors is associated with lower odds of being a corporation.

	(1)	(2)	(3)	(4)	(5)
Dependent variable: Incorporation dummy					
Average waiting days	-0.000168 (0.00109)				
Time spent on regulation		0.000643 (0.00214)			
Total bribe (in log)			0.136*** (0.0377)		
Bribery depth				1.057*** (0.253)	
Informal competitors					-0.402*** (0.0876)
Controls	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Constant	-1.810*** (0.156)	-1.452*** (0.118)	-3.198*** (0.405)	-1.675*** (0.125)	-1.236*** (0.256)
Observations	1635	3634	926	3749	2303

6. Results and Discussion

6.2 Predicting the choice of legal forms

- Average waiting days has no impact on incorporation.
- Time spent on regulation, total bribes paid and bribery depth has a positive and statistically significant impact on the likelihood of being incorporated.
- The presence of informal competitors is associated with lower odds of seeking a more complex legal form.

	(1)	(2)	(3)	(4)	(5)
Dependent variable: Legal form					
Average waiting days	0.000129 (0.000817)				
Management time spent on regulation		0.00296** (0.00134)			
Total bribe (in log)			0.107*** (0.0254)		
Bribery depth				0.911*** (0.190)	
Informal competitors					-0.239*** (0.0563)
Controls	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Observations	1635	3633	926	3748	2302

6. Results and Discussion

6.3 Instrumental variable regression

- The F-statistics for the first stage regressions are significantly higher than the critical values identified by Stock and Yogo (2002) and Staiger and Stock (1997) for detecting weak instruments.
- Instruments are strong and reliable for the analysis.

	(1)	(2)	(3)	(4)	(5)
	Dependent variable				
	Average waiting days	Management time spent on regulation	Total bribe (in log)	Bribery depth	Informal competitor
Average waiting days by region	0.576*** (0.132)				
Average waiting days by industry	0.413*** (0.156)				
Average management time spent on regulation by firm size		0.970*** 0.0857)			
Average bribe by industry			0.657*** (0.0669)		
Average bribe by region			0.557*** (0.0647)		
Average bribery depth by region				0.980*** (0.0831)	
Average informal competitors by firm size					0.833*** (0.122)
F-statistic	38.80	128.03	192.21	549.29.09	46.90
Constant	1.239 (1.033)	0.207 (0.398)	-2.200*** (0.617)	-0.00734 (0.00791)	0.0615 (0.0450)
Observations	1646	3756	924	3919	2468

6. Results and Discussion

6.3 Instrumental variable regression

- Delays for getting permits, time spent on regulation, and amount of bribes paid significantly deter firms from becoming incorporated.
- If a firm faces more instances of bribe requests, it is more likely to become incorporated.
- Competition from unregistered or informal firms may deter incorporation among formal businesses.

	(1)	(2)	(3)	(4)	(5)
Dependent variable: Incorporation dummy					
Average waiting days	-0.0155*** (0.00224)				
Time spent on regulation		-0.0544*** (0.00288)			
Total bribe (in log)			-0.366*** (0.0611)		
Bribery depth				9.256*** (0.211)	
Informal competitors					-2.118*** (0.141)
Controls	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Constant	-1.342*** (0.158)	-0.709*** (0.0947)	1.673*** (0.635)	-2.741*** (0.0811)	-0.0873 (0.836)
Observations	1635	3634	926	3749	2303

6. Results and Discussion

6.3 Instrumental variable regression

- Delays for getting permits and time spent on regulation significantly deter firms from choosing a more complex legal form.
- Amount of bribes paid have no impact on the legal form.

	(1)	(2)	(3)	(4)	(5)
Dependent variable: Legal form					
Average waiting days		-0.0123*** (0.000858)			
Management time spent on regulation			-0.0567*** (0.00472)		
Total bribe (in log)			-0.0667 (0.0412)		
Bribery depth				11.65*** (0.623)	
Informal competitors					-7.713*** (0.567)
Controls	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes
Observations	1635	3633	926	3748	2302

6. Results and Discussion

6.4 Incorporation and obstacles

- Corporations report lower levels of informal competition as an obstacle compared to unincorporated firms.
- Corporations report lower levels of corruption and licensing obstacles compared to unincorporated firms.
- Corporations perceive tax rates and tax administration as a significantly greater obstacle compared to non-corporate firms.

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent variable					
	Informal competition obstacle	Tax rate obstacle	Tax administration obstacle	Licensing obstacle	Corruption obstacle	Courts obstacle
Incorporation dummy	-0.236*** (0.0567)	0.166*** (0.0500)	0.121** (0.0537)	-0.132** (0.0550)	-0.174*** (0.0527)	-0.0388 (0.0553)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Year dummy	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3495	3688	3686	3714	3708	3550

7. Summary

- Djankov et al. (2002) highlight higher regulatory burdens discourage formal business activities by increasing the costs and uncertainties associated with compliance.
- Svensson (2003) found that corruption acts as an additional tax on businesses, disproportionately affecting smaller firms with fewer resources to pay bribes.
- Firms facing more instances of bribe requests encourages them to incorporate, possibly due to the need for formal legal protection in corrupt environments.
- Informal firms are can outcompete formal firms by operating at lower costs as they are not under taxation and regulation. This creates a disincentive for businesses to incorporate, as they would face higher operational costs without a level playing field (La Porta and Shleifer, 2014; Baik et al., 2015).

8. Key Takeaways

- Regulatory delays and prevalence of informal sector competition inhibits growth orientations of enterprises by deterring them from becoming incorporated.
- Effect of corruption on firm's choice of legal form and decision to incorporate is ambiguous.
- Incorporated firms faces fewer obstacles vis-a-vis informal competition, licensing and corruption. However, incorporated firms report higher tax rate and tax administration obstacles compared to their unincorporated counterparts.
- Streamlining taxation procedures, regulatory processes and reducing bureaucratic hurdles can encourage more firms to incorporate.

References

- Amin, M. (2021). Does competition from informal firms hurt job creation by formal firms? Evidence using firm-level survey data. The World Bank. <https://doi.org/10.1596/1813-9450-9515>
- Amin, M., & Soh, Y. C. (2021). Does greater regulatory burden lead to more corruption? Evidence using firm-level survey data for developing countries. *The World Bank Economic Review*, 35(3), 812-828.
- Asadullah, M. N., & Chakravorty, N. N. T. (2019). Growth, governance and corruption in Bangladesh: A re-assessment. *Third World Quarterly*, 40(5), 947–965. <https://doi.org/10.1080/01436597.2019.1599854>
- Aterido, R., Hallward-Driemeier, M., & Pages, C. (2011). Big constraints to small firms' growth? Business environment and employment growth across firms. *Economic Development and Cultural Change*, 59(3), 609–647.
- Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2008). How important are financing constraints? The role of finance in the business environment. *The World Bank Economic Review*, 22(3), 483–516. <https://doi.org/10.1093/wber/lhn018>
- Ayyagari, M., Demirgüç-Kunt, A., & Maksimovic, V. (2010). Formal versus informal finance: Evidence from China. *Review of Financial Studies*, 23(8), 3048–3097. <https://doi.org/10.1093/rfs/hhq030>
- Baik, Y.-S., Lee, S.-H., & Lee, C. (2015). Entrepreneurial firms' choice of ownership forms. *International Entrepreneurship and Management Journal*, 11(3), 453–471. <https://doi.org/10.1007/s11365-013-0289-9>
- Bangladesh Business Environment 2023—Findings from the Executive Opinion Survey. (n.d.).
- Chen, D., & Qi, S. (2016). The importance of legal form of organization on small corporation external financing. *Economic Inquiry*, 54(3), 1607–1620. <https://doi.org/10.1111/ecin.12330>

References

Demirguc-Kunt, A., Love, I., & Maksimovic, V. (2006). Business environment and the incorporation decision. *Journal of Banking & Finance*, 30(11), 2967-2993.

Devereux, M. P., & Liu, L. (2016). Stimulating investment through incorporation.

De Rosa, D., Gooroochurn, N., & Görg, H. (2010). Corruption and productivity: Firm-level evidence from the BEEPS survey. *World Bank Policy Research Working Paper 5348*, The World Bank, Washington DC.

Diamond, D. W. (1989). Reputation acquisition in debt markets. *Journal of Political Economy*, 97(4), 828–862. <https://doi.org/10.1086/261630>

Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2014). The regulation of entry. *Quarterly Journal of Economics*.

Dollar, D., Hallward-Driemeier, M., & Mengistae, T. (2006). Investment climate and international integration. *World Development*, 34(9), 1498–1516.

Easterbrook, F. H., & Fischel, D. R. (1985). Limited liability and the corporation. *The University of Chicago Law Review*.

Fisman, R., & Svensson, J. (2007). Are corruption and taxation really harmful to growth? Firm level evidence. *Journal of Development Economics*, 83(1), 63–75. <https://doi.org/10.1016/j.jdeveco.2005.09.009>

Goolsbee, A. (2004). The impact of the corporate income tax: Evidence from state organizational form data. *Journal of Public Economics*, 88(11), 2283–2299. <https://doi.org/10.1016/j.jpubeco.2003.05.002>

Harhoff, D., Stahl, K., & Woywode, M. (1998). Legal form, growth and exit of West German firms—Empirical results for manufacturing, construction, trade and service industries. *The Journal of Industrial Economics*, 46(4), 453–488. <https://doi.org/10.1111/1467-6451.00083>

Healy, P. M., & Palepu, K. G. (n.d.). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature.

Hertz, G. T., Beasley, F., & White, R. J. (2009). Selecting a legal structure: Revisiting the strategic issues and views of small and micro business owners, 20(1).

Javorcik, B. S., & Wei, S.-J. (2009). Corruption and cross-border investment in emerging markets: Firm-level evidence. *Journal of International Money and Finance*.

References

- Khurana, I., Krichevskiy, D., Dempster, G., & Stimpson, S. (2021). Institutions, entrepreneurial adaptation, and the legal form of the organization. *Journal of Entrepreneurship and Public Policy*, 10(2), 261–283. <https://doi.org/10.1108/JEPP-10-2019-0087>
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and finance. *Journal of Political Economy*, 106(6), 1113–1155.
- La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (1999). Corporate ownership around the world. *Journal of Finance*, 54(2), 471–517.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (2000). Investor protection and corporate governance. *Journal of Financial Economics*, 58(1-2), 3–27.
- La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2003). What works in securities laws? *Harvard University Working Paper*.
- La Porta, R., & Shleifer, A. (2014). Informality and development. *Journal of Economic Perspectives*, 28(3), 109–126. <https://doi.org/10.1257/jep.28.3.109>
- Levin, J. D., & Tadelis, S. (2002). A theory of partnerships. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.311159>
- Mackie-Mason, J. K., & Gordon, R. H. (1997). How much do taxes discourage incorporation? *The Journal of Finance*, 52(2), 477–506. <https://doi.org/10.1111/j.1540-6261.1997.tb04810.x>
- Morrison, A. D., & Wilhelm, W. J. (2004). Partnership firms, reputation, and human capital. *The American Economic Review*, 94(5).
- Paksha Paul, B. (2010). Does corruption foster growth in Bangladesh? *International Journal of Development Issues*, 9(3), 246–262. <https://doi.org/10.1108/14468951011073325>
- Svensson, J. (2003). Who must pay bribes and how much? Evidence from a cross section of firms. *Quarterly Journal of Economics*.
- Winton, A. (1993). Limitation of liability and the ownership structure of the firm. *The Journal of Finance*, 48(2), 487–512. <https://doi.org/10.1111/j.1540-6261.1993.tb04724.x>

Thank you for listening.