International political economy and the environment: back to the basics?

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Since the 1990s, the focus of scholarship on international political economy and the environment (IPEE) has been heavily influenced by the policy agenda promoted by the 1987 Brundtland Report and the 1992 Rio Earth Summit. That agenda advocated the strengthening of the linkages between international economic and environmental cooperation around a grand bargain of 'sustainable development'. The new political buzz around the sustainable development agenda resulted in a surge of IPEE research focused on various kinds of cooperative environment–economy initiatives that emerged from that time onwards, such as the economic dimensions of international environmental governance initiatives, the environmental activities of international economic institutions and regimes, and new kinds of private international regimes governing the environment–economy interface. This work has advanced our understanding of the relationship between the international political economy and the environment in significant ways.

While acknowledging the importance of this work, in this article we take a different approach. We argue that the somewhat narrow focus on treaties, institutions and regimes within IPEE has resulted in a relative neglect of the environmental implications of larger structural trends in the international political economy. We focus on three such trends that we feel are particularly deserving of more attention from IPEE scholars: the globalization of international financial markets; the rise of newly powerful states in the global economy; and the recent emergence of high and volatile commodity prices. These new trends have been explored within the broader field of IPE,[1] but their direct consequences for the natural environment have not yet been analysed in comparable depth. This neglect may be linked to the fact that they often lack significant cooperative governance efforts that are explicitly tied to environmental outcomes. By focusing more on the direct environmental implications of these broad structural trends—as well as the relationships between them—IPEE scholars will gain a richer understanding of the relationship between the international political economy and the environment.[2]

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[1] In this article, we use the acronym 'IPE' to refer to the field of study, while we spell out 'international political economy' when referring to the 'real world' intersection of politics and economics in the global system.

[2] We focus on the influence of the international political economy on the environment. A more comprehensive

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International political economy and the environment

The contemporary field of IPE was born in the 1970s, largely in response to changes in the 'real world'. These included intensifying economic interdependence and the growth of transnational corporations, as well as several dramatic developments in the early 1970s: the breakdown of the Bretton Woods monetary system, the 1973 oil shock, developing countries' demands for a New International Economic Order, and heightened trade conflicts between the major western powers. The field initially attracted scholars from quite diverse backgrounds. The largest group consisted of International Relations specialists who reacted against their field's preoccupation with the study of war and peace to explore the new prominence of economic issues in world politics. The 'politicization' of the world economy also encouraged a number of prominent international and development economists to begin to think more systemically about the political foundations of international markets. Key contributions also came from scholars of domestic and comparative politics who became interested in the reciprocal relationship between global economic developments and domestic politics, as well as from economic historians, sociologists, geographers, and scholars of international business.

These diverse scholars were united by the questions they asked: What is the relationship between politics and economics in world affairs? How do states and markets interact in the global system? In what ways are the pursuits of power and wealth interrelated at the international level? Their answers to these questions differed enormously, leading to a distinction quickly being drawn between liberal, nationalist and Marxist schools within the field. Despite these differences, the pioneers of contemporary IPE shared a common commitment to interdisciplinarity and a desire to understand better the large issues raised by the questions above.[3] In so doing, they drew explicitly upon older traditions of interdisciplinary scholarship, such as nineteenth-century classical political economy, as well as the mid-twentieth-century writings of political economists with international interests such as Albert Hirschman, John Maynard Keynes, Karl Polanyi and Jacob Viner. Susan Strange was particularly eloquent in highlighting the field's interdisciplinary ambitions. In her words, the new field of IPE was an 'open range, like the old Wild West, accessible—as the classical study of political economy had been—to literate people of all walks of life, from all the professions and all political proclivities'.[4]

As interest in environmental issues began to grow from the 1970s onwards, the intellectual openness of IPE included a growing engagement with scholars studying this subject at that time. For example, Strange herself solicited a chapter

IPEE account would also explore how environmental change influences the international political economy. See e.g. Derek Hall, 'Pollution export as state and corporate strategy: Japan in the 1970s', *Review of International Political Economy* 16: 2, 2009, pp. 260–83, and 'Dying geese: Japan and the international political ecology of Southeast Asia', PhD diss., Cornell University, 2002.

[3] Benjamin Cohen, *International political economy: an intellectual story* (Princeton, NJ: Princeton University Press, 2008).

[4] Susan Strange, 'An eclectic approach', in Craig Murphy and Roger Tooze, eds, *The new international political economy* (Boulder, CO: Lynne Rienner, 1991), p. 33. As she argued more generally, 'openness within the social sciences is the best defence against the natural academic inclination to pretentiousness, pomposity and obfuscation': 'Preface', in Susan Strange, ed., *Paths to international political economy* (London: Allen & Unwin, 1984), p. ix.

by Dennis Pirages advocating an 'ecological approach' to the field in her 1984 edited volume identifying *Paths to international political economy*. Pirages's chapter argued that an explanation of developments in the international political economy would be 'enhanced by a better understanding of the evolutionary relationship among human beings, their societies and the life-sustaining global ecosystem'.[5] He was particularly keen to highlight how resource scarcity and the limited carrying capacity of the earth were affecting the dynamics of the international political economy. Other IPE scholars reversed the causal arrow—as we do in this article—to focus on how the dynamics of the international political economy were affecting the environment. As broader debates about economic globalization heated up, particular attention was devoted to the environmental implications of liberalized and expanding international trade, and to the activities of industrial and resource-focused transnational corporations.[6]

Since the 1990s, some work has continued to focus on these larger structural trends and issues concerning the relationship between the environment and the international political economy.[7] For the most part, however, IPEE scholarship has become increasingly focused on the narrower study of international cooperative initiatives designed explicitly to link economic and environmental issues. One set of literature has examined how international economic regimes and institutions (e.g. the World Trade Organization, the North American Free Trade Agreement, the IMF and the World Bank) have begun to try to address environmental issues. Another has examined various economic provisions of international environmental governance initiatives (e.g. trade provisions, financing arrangements, carbon markets). In the past decade or so, particular attention has also been given to the rise of private governance regimes addressing the economy–environment interface, at scales ranging from local to global. Much of the research on this topic has focused on climate change in particular, analysing Kyoto and post-Kyoto climate institutions and regimes, and the many governance arrangements that address this pressing environmental problem.[8]

The intensifying focus on international cooperative initiatives of this kind was an understandable consequence of developments in the real world. The 1987 Brundtland Report and the 1992 Rio Earth Summit acted as major catalysts in encouraging greater international attention to the environment–economy link.[9]

[5] Dennis Pirages, 'An ecological approach', in Strange, ed., *Paths to international political economy*, p. 53.

[6] For surveys, see Jennifer Clapp and Peter Dauvergne, *Paths to a green world* (Cambridge, MA: MIT Press, 2011); Marc Williams, 'International political and global environmental change', in John Vogler and Mark Imber, eds, *The environment and international relations* (London: Routledge, 1996).

[7] See e.g. Jennifer Clapp, *Toxic exports* (Ithaca, NY: Cornell University Press, 2001); Peter Dauvergne, *The shadows of consumption* (Cambridge, MA: MIT Press, 2008); Derek Hall, 'Regional shrimp, global tree, Chinese vegetables', in Peter Katzenstein and Takahashi Shiraishi, eds, *Beyond Japan* (Ithaca, NY: Cornell University Press, 2006); Peter Newell and Matthew Paterson, 'A climate for business: global warming, the state and capital', *Review of International Political Economy* 5: 4, 1998, pp. 679–703; Tom Princen, Michael Maniates and Ken Conca, eds, *Confronting consumption* (Cambridge, MA: MIT Press, 2002).

[8] Much of the work on these issues has been published in the journal *Global Environmental Politics*, which was launched in 2000 with the aim of providing a forum for work in the emerging field of GEP.

[9] See World Commission on Environment and Development, *Our common future* (Oxford: Oxford University Press, 1987), which includes an entire chapter on the global economy. See also Steven Bernstein, *The compromise of liberal environmentalism* (New York: Columbia University Press, 2011).

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They highlighted the need for international cooperation if the world was to address multiple environmental challenges—from resource scarcity to environmental degradation—that they saw as being exacerbated by broad trends in the global economy. Their legacy was a proliferation of cooperative initiatives seeking to link the governance of the international economy and the environment. Some involved existing institutions and regimes; others created entirely new governance arrangements. IPEE scholars suddenly had a multitude of fascinating political initiatives to study and plenty of questions to address concerning issues such as their legitimacy, authority and accountability.

But this shifting focus of IPEE also reflected two intellectual trends, one in the field of IPE and the other in the emerging field of global environmental politics (GEP). Within the field of IPE, many scholars became increasingly focused on the problematic of international cooperation, with the emergence of international regime theory in the early 1980s and the growing prominence of liberal institutionalist analyses.[10] Many—particularly in the United States—saw IPE increasingly as a subfield of international relations, preoccupied by the problematic of international cooperation, rather than as the more interdisciplinary field driven by broader questions that Strange and others had initially envisioned.[11] This development in the IPE field provided key analytical tools and a broader theoretical literature within which to locate the IPEE research on the new post-Brundtland cooperative initiatives to link economy and environment.

Intellectual trends in IPEE were also influenced by the emergence of the field of GEP in the early 1990s. Although mainstream IPE scholarship began to acknowledge the importance of environmental issues during the 1980s and 1990s, many researchers interested in IPEE felt themselves to be largely on the margins of the field. A quick glance at the leading IPE textbooks over the past two decades shows why. Very few of these texts devote much, if any, space either to environmental issues or to 'green' world-views (which offer a perspective on IPE distinct from the classic liberal, Marxist or nationalist schools of thought).[12] With the mainstream of IPE reluctant to incorporate the environment much into its analysis, scholars interested in the interface between the international political economy and the environment increasingly migrated to the relatively new field of GEP, where environmental issues took centre stage.

Many of the pioneers of GEP initially drew heavily on regime theory in analysing global environmental politics. With its focus on principles, rules, norms and decision-making procedures, regime theory proved to be an attractive frame-

[10] Influential texts with this focus were Stephen Krasner, *International regimes* (Ithaca, NY: Cornell University Press, 1983), and Robert Keohane, *After hegemony* (Princeton, NJ: Princeton University Press, 1984).

[11] For a more detailed discussion, see Cohen, *International political economy*. Much of the leading IPE scholarship of this kind was published in the journal *International Organization*.

[12] For recent exceptions that give more attention to environmental issues, see Robert O'Brien and Marc Williams, *Global political economy* (New York: Palgrave Macmillan, 2010); John Ravenhill, *Global political economy* (Oxford: Oxford University Press, 2011). For 'green' world-views, see Eric Helleiner, 'International political economy and the greens', *New Political Economy* 1: 1, 1996, pp. 59–78; J. A. Tickner, 'States and markets: an ecofeminist perspective on international political economy', *International Political Science Review* 14: 1, 1993, pp. 59–69; Clapp and Dauvergne, *Paths to a green world*, ch. 1.

work for analysing the emergence of international environmental agreements and institutions that began to blossom in the late 1980s and throughout the 1990s. Indeed, an early key text in the GEP field, Gareth Porter and Janet Welsh Brown's *Global environmental politics* (first published in 1991), presented regime theory as the central analytical framework for the study of global environmental issues.[13] While regime theory is no longer such a dominant analytical tool, the field is still largely concerned with analysing the emergence, design and effectiveness of institutions, agreements and other public and private governance initiatives that focus on the environment.[14] This focus on mechanisms of 'global environmental governance' is not embraced by everyone working in GEP, but it has remained core to the field and has further reinforced the interest of IPEE scholars in international cooperative initiatives.[15]

IPEE studies of these cooperative initiatives have been very important in advancing our understanding of the relationship between the international political economy and the environment. But this approach to the study of IPEE encourages scholars to focus only on areas where significant international cooperative initiatives exist to govern the link between the global economy and the environment. Many activities in the international political economy are not subject to such environmentally oriented cooperation arrangements, despite the fact that those activities have major implications for the environment. With their current focus, IPEE scholars risk giving short shrift to the study of these broader relationships between the international political economy and the environment.

Susan Strange highlighted a similar limitation of regime theory in the early 1980s: 'it encourages academics to practice a kind of analytical *chiaroscuro* that leaves in the shadow all the aspects of the international economy where no regimes exist'.[16] In our view, this critique is relevant to IPEE governance-focused analyses today. The focus within the IPEE literature on treaties, institutions and regimes has resulted in a relative neglect of a number of global economic structural trends that have profound implications for the natural environment. The broader field of

[13] Gareth Porter and Janet Brown, *Global environmental politics* (Boulder, CO: Westview, 1991). Not all work at this time analysing growing international environmental cooperation did so through a regime theory lens; see Pratap Chatterjee and Mathias Finger, *The Earth brokers* (London: Routledge, 1994), and Wolfgang Sachs, *Global ecology: a new arena of political conflict* (London: Zed Books, 1993).

[14] For important contributions to this literature, see e.g. Oran Young, 'The architecture of global environmental governance: bringing science to bear on policy', *Global Environmental Politics* 8: 1, 2008, pp. 14–32; Peter M. Haas, 'Addressing the global governance deficit', *Global Environmental Politics* 4: 4, 2004, pp. 1–15; Frank Biermann, 'Earth system governance as a crosscutting theme of global change research', *Global Environmental Change* 17: 3/4 , 2007, pp. 326–37. Peter Dauvergne's analysis of the articles published in the leading journal *Global Environmental Politics* during its first years up to 2008 highlights this focus of the GEP field well. By his calculations, less than 15% of the journal's articles between 2001 and 2008 aimed *primarily* to analyse the role of multinational corporations, trade, consumption and finance in global environmental politics (this figure does not include articles whose *primary* focus was to analyse regimes, international agreements, international institutions and global governance related to these issues). See Peter Dauvergne, 'Global environmental politics: the challenge of diversity', unpublished manuscript (on file with authors).

[15] For some textbooks that present a wider conception of IPEE, see Clapp and Dauvergne, *Paths to a green world*; Matthew Paterson, *Understanding global environmental politics* (London: Palgrave Macmillan, 2001).

[16] Susan Strange, 'Cave! hic dragones: a critique of regime analysis', *International Organization* 36: 2, 1982, p. 480. Not everyone agrees with Strange's critique of regime analysis. There is, for example, a considerable literature on 'non-regimes'. See Radoslav Dimitrov, Detlef Sprinz, Gerald DiGiusto and Alexander Kelle, 'International nonregimes: a research agenda', *International Studies Review* 9: 2, 2007, pp. 230–58.

IPE analyses those trends well, but rarely focuses on their environmental consequences. And the field of GEP tends to overlook these consequences because it is often too narrowly focused on existing international cooperative initiatives. The result is a hole in the literature that leaves us without much analysis of how some important broad trends in the international political economy impact on the natural environment.

IPEE's relative neglect of this bigger picture is unfortunate, because one of the key contributions that IPE has to offer the study of the environment is its wider focus on global economic structures and processes, and on the power relationships within them. IPEE scholars need to take a step back to gain a new appreciation of this bigger picture as well as of their comparative advantage in highlighting its significance for environmental outcomes. The rationale is not just intellectual but also normative. By focusing on existing cooperative initiatives, IPEE scholars risk presenting a picture of the relationship between the international political economy and the environment that is too rosy, overlooking important negative environmental implications of some broader structural trends in the international political economy that are only weakly, or not at all, governed by formal international cooperative initiatives.

The remainder of this article seeks to map out a research agenda that could partially address this weakness in IPEE literature. We highlight the environmental implications of three key trends in the international political economy: the globalization of financial markets; significant shifts in the economic power of leading states; and high and volatile commodity prices on world markets. These three trends have been selected both because they are ushering in fundamental shifts in the international political economy and because they each have direct environmental impacts that are, in our view, under-studied by IPEE scholars. Our discussion of these trends is not intended to be comprehensive. There are other developments equally deserving of attention, such as the international spread and intensification of consumer culture, the proliferation of technology risk, and trends in global inequality.[17] For space reasons, however, we have focused on the three trends identified above. Our goal is simply to provide some illustrations of the kind of research that we believe deserves more attention from IPEE scholars in the coming years.

The globalization of financial markets

One of the most dramatic trends in the international political economy over the past few decades has been the globalization of financial markets. Enormous sums of private financial capital are now traded across borders round the clock with few restrictions, dwarfing the size of international trade and foreign direct investment (as well as that of the loans of public international financial institutions such as the IMF and World Bank). The study of the politics of global finance has

[17] See e.g. Dauvergne, *The shadows of consumption*; Robert Falkner and Nico Jaspers, 'Regulating nanotechnologies: risk, uncertainty and the global governance gap', *Global Environmental Politics* 12: 1, 2010, pp. 30–55.

correspondingly moved to the centre of scholarly debates within the field of IPE. Scholars have examined the impact of financial globalization on issues such as national policy autonomy, class and sectoral conflicts, the distribution of power between states, the growth of private transnational authority, and international regulatory cooperation and crisis management.[18]

But relatively little attention has been devoted to the environmental implications of global financial markets by scholars of either IPE or GEP. The contrast with the much more extensive literature on the environmental implications of international trade and multinational corporations is striking. When the environmental implications of international finance have been discussed, analysis has usually been focused on the international lending activities of public bodies such as the Global Environmental Facility, World Bank, IMF or national export credit and aid agencies.[19] More research is needed on the environmental implications of decisions made within the much larger and more influential global 'electronic herd' of private financial flows.[20]

In keeping with the general pattern discussed in the previous section, the few IPEE scholars who have begun to tackle this subject have focused primarily on a number of cooperative initiatives that have sought to encourage actors in global financial markets to support sustainable development. Most of these initiatives have emerged within the last decade and have involved the creation of voluntary international standards for private financial actors to follow in their business activities. Standards of this kind now exist for a wide range of key actors in global financial markets, including international banks, insurance companies, institutional investors and accountants. Some of these standards are focused on harnessing global financial markets to address a wide range of environmental problems, while others are more narrowly focused on issues such as climate change. In a few instances, these initiatives have been promoted by official agencies such as the United Nations Environment Programme Finance Initiative (UNEP-FI) and the World Bank. In other cases, the standards have been developed with no official involvement through collaborative initiatives between the financial industry and non-governmental environmental organizations.

A small pioneering group of IPEE scholars has usefully analysed how these arrangements have emerged as well as how and why leading private actors have endorsed them.[21] But the actual influence of these voluntary standards on

[18] For two recent surveys of this literature, see Eric Helleiner and Stefano Pagliari, 'The end of an era in international financial regulation? A post-crisis research agenda', *International Organization* 65: 3, 2011, pp. 169–200; Richard Deeg and Mary O'Sullivan, 'The political economy of global finance capital', *World Politics* 61: 4, 2009, pp. 731–63.

[19] For a survey of this literature, see Clapp and Dauvergne, *Paths to a green world*.

[20] The quoted words are from Thomas Friedman, *The lexus and the olive tree* (New York: Random House, 2000), p. 109.

[21] Philip Pattberg, 'The institutionalization of private governance: how business and non-profit organizations agree on transnational rules', *Governance* 18: 4, 2005, pp. 589–610; Michael Macleod and Jacob Park, ' Financial activism and global climate change: the rise of investor-driven governance networks', *Global Environment Politics* 11: 2, 2011, pp. 54–74; Chris Wright, 'Global banks, the environment and human rights: the impact of the Equator Principles on lending policies and practices', *Global Environmental Politics* 12: 1, 2012, pp. 56–77; Jason Thistlethwaite, 'Planet finance: the governance of climate change risks in financial markets', PhD dissertation, University of Waterloo, 2011.

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environmental outcomes remains under-studied and needs more attention. Many analysts remain sceptical that they will have much impact on the functioning of global financial markets. In some cases, the scepticism stems from the vague nature of the standards themselves. Even where their content is more precise, there are reasons to question whether voluntary commitments will bring about significant change in market behaviour.[22]

Rather than just focusing on the negotiation of these weak governance arrangements, IPEE scholars also need to devote much more attention to the environmental implications of the actual everyday functioning of the markets. Even if some or all of the voluntary standards were consequential, this wider analytical focus is necessary since there are large parts of global financial market activity that are not covered by any of these voluntary environmental standards. Work on this topic should help to bring out from the shadows some of the key ways in which financial globalization influences the environment.

Some of the influences are potentially far-reaching. One of the pioneering efforts to analyse the environmental consequences of global financial markets came not from IPEE scholars but from business leaders in the wake of the Rio Earth Summit. In 1996, the World Business Council for Sustainable Development—formed in advance of the 1992 Earth Summit as a business lobby—published an important volume entitled *Financing change* that highlighted how financial markets' encouragement of 'short-termism' risked undermining sustainable development. As the authors Stephan Schmidheiny and Federico Zorraquín put it, 'sustainable development is concerned with the importance of the future' but 'financial markets discount the future routinely and heavily'.[23] For example, they noted that financial investors may prefer to see a forest harvested for a short-term windfall profit rather than to support its sustainable management over the long term. Indeed, they argued that 'it is clear that the globalization of investment flows is speeding the destruction of natural forests'.[24] Other analysts have suggested that the volatility of the global markets reinforces this short-termism, as financial crises can undermine the prospects for long-term environmental planning.[25]

In researching this issue, it is crucial that IPEE scholars disaggregate the key actors in the markets. The short-termism of the markets is well symbolized by the speculative activities of currency traders and hedge funds. But some other financial actors embrace a longer-term view, as evidenced in, for example, the support of leading insurance companies for cooperative initiatives addressing climate change.[26] The scholarship on voluntary standards noted above has also

[22] For a recent sceptical view, see Adam Harmes, 'The limits of carbon disclosure: theorizing the business case for investor environmentalism', *Global Environmental Politics* 11: 2, 2011, pp. 96–119.

[23] Stephan Schmidheiny and Federico Zorraquín, *Financing change: the financial community, eco-efficiency and sustainable development* (Cambridge, MA: MIT Press, 1996), p. 8.

[24] Schmidheiny and Zorraquín, *Financing change*, p. 10.

[25] See e.g. Andrea Durbin and Carol Welch, 'The environmental movement and global finance', in Jan Aart Scholte and Albrecht Schnabel, eds, *Civil society and global finance* (London: Routledge, 2002).

[26] Matthew Paterson, 'Risky business: insurance companies in global warming politics', *Global Environmental Politics* 1: 4, 2001, pp. 18–41; Jason Thistlethwaite, 'The ClimateWise principles: self-regulating climate change risks in the insurance sector', *Business and Society,* forthcoming, 2012, bas.sagepub.com/content/51/1/121, accessed 2 March 2012.

highlighted how some powerful institutional investors, such as pension funds and mutual funds, have allied with environmental groups in demanding greater disclosure of firms' environmentally related material risks (ranging from physical risks to potential legal liabilities and the costs of complying with environmental regulation). In some cases, the goal has been to respond to customer demand for 'ethical investing', but analysts have argued that the push for greater environmental risk disclosure has also been driven by the bottom line: fund managers have sought to improve long-term investment returns by reducing financial exposure to those risks.

Since Schmidheiny and Zorraquín's book was published, sovereign wealth funds (SWFs) have become another key investor in the markets, and their investment practices also require more study. The combined assets of these state-controlled funds have become larger than the entire hedge fund industry, with the funds of countries such as Abu Dhabi, China, Kuwait, Norway and Singapore being particularly large. Their managers are influenced not just by profit-seeking motives but also by public goals, including some that may have environmental consequences. Some of these consequences may be positive: Norway's enormous fund, for example, is mandated to uphold international environmental conventions in its investments. But the SWFs of some emerging powers are also being used—as noted below—to secure commodities abroad in ways that may have negative environmental consequences.

Credit rating agencies form another influential group of actors that deserves more scrutiny from IPEE scholars. The ability of these agencies to move markets has been well documented by IPE scholars in other contexts.[27] Schmidheiny and Zorraquín devoted an entire chapter to their activities in their 1996 book, noting that the ways in which their views of environmental risks are incorporated into ratings could have enormous consequences in steering investments towards, or away from, firms with poor environmental practices.[28] We know very little, however, about whether or how agencies incorporate environmental risks into the determination of their ratings.

More generally, IPEE scholars need to do more to study how conceptions of economic value and risks—often quite environmentally unfriendly ones—are constructed and diffused among key actors within global financial markets. Often embedded in highly technical discourse, these conceptions play a key role in steering the giant electronic financial herd in one direction or another, with enormous environmental consequences.[29] At a deeper level, IPEE scholarship could also investigate the environmental consequences of the broader 'financialization' of economic and social life that many IPE scholars believe has resulted from the growing influence of global financial markets in recent years.

[27] Tim Sinclair, *The new masters of capital* (Ithaca, NY: Cornell University Press, 2005).
[28] Schmidheiny and Zorraquín, *Financing change*, ch. 8.
[29] For an important recent analysis, see Jason Thistlethwaite, 'Counting the environment: the environmental implications of international accounting standards', *Global Environmental Politics* 11: 2, 2011, pp. 75–97.

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Rising economic powers: China, India and IPEE

A second and more recent trend in the international political economy is the emergence of newly powerful states in the global economy. Particular attention has been paid by IPE scholars to the rapid economic growth of China and India and their growing political standing over the past decade in global economic fora such as the WTO, IMF and World Bank, and the new G20. Despite the increased attention to China and India in the IPE literature, there has been relatively little focus in mainstream work in the field on the significance of the economic rise of these countries for the natural environment.

The issue has received some attention from scholars who have begun examining the impact of these countries' growing economic weight on environmental cooperation arrangements, particularly those that address climate change. Under the Kyoto Protocol, developing countries were exempt from making commitments to reduce carbon emissions. With the Kyoto Protocol playing a less significant role owing to the refusal of Japan, Canada and Russia to sign on to its second commitment period, one of the major issues of contention in global climate negotiations today is how to bring large developing-country emitters, China and India in particular, on board with meaningful emission reduction requirements under a new climate regime. India and China have also been key players in the Clean Development Mechanism under the Kyoto Protocol.

The incorporation of India and China into climate governance arrangements is important because the carbon emissions of these countries have risen rapidly alongside their economic growth over the past decade. Since 2006, China has been the world's largest emitter of carbon, while India is now the third largest emitter (with the United States between them at second). Indeed, China now accounts for fully one-quarter of all the world's carbon emissions.[30] Although its per capita emissions are not as high as those of the industrialized countries, they are rapidly increasing. With close to one-quarter of the world's population living in China, this is a significant trend. As a result of these recent shifts in carbon emissions, China and India both play important roles in the post-Kyoto climate negotiations. Indeed, the failure to make significant progress in Copenhagen in 2009 on a post-Kyoto climate arrangement has been linked by some analysts to the changed power dynamics between these countries and the rich industrialized states.[31]

The rapid ascent of China and India as top carbon emitters reflects the major economic changes within these countries over the past decade, particularly their rapid industrialization based on heavy use of fossil fuels. The importance of this

[30] See Paul G. Harris, 'Peace, security and global climate change: the vital role of China', *Global Change, Peace and Security* 23: 2, 2011, pp. 141–5.

[31] See Harris, 'Peace, security and global climate change'; Christer Karlsson, Charles Parker, Mattias Hjerpe and Bjorn-Ola Linner, 'Looking for leaders: perceptions of climate change leadership among climate change negotiation participants', *Global Environmental Politics* 11: 1, 2011, pp. 89–107. See also Radoslav S. Dimitrov, 'Inside Copenhagen: the state of climate governance', *Global Environmental Politics* 10: 1, 2010, pp. 18-24; J. Timmons Roberts, 'Multipolarity and the new world (dis)order', *Global Environmental Change* 21: 3, 2010, pp. 776-84; Matthew Paterson, 'Post-hegemonic climate control politics?', *British Journal of Politics and International Relations* 11: 1, 2009, pp. 140–58; Rosemary Foot and Andrew Walter, *China, the United States and global order* (Cambridge: Cambridge University Press, 2010), ch. 5.

development, however, goes beyond the impact on carbon emissions and negotiations for a new climate governance arrangement. Yet much less work has been carried out by IPEE scholars on the broader environmental impacts of rapid industrial growth in these countries on global ecosystems, land use and resource availability. One reason why these broader impacts may have received less attention from IPEE scholars is that there are often no international cooperation regimes in place to address them. This governance gap should not preclude the study of these other important environmental impacts of China's and India's rising economic influence in the international political economy.

To begin to fill this gap in the literature, IPEE scholars could draw on the insights of studies of the international environmental implications—or 'shadow ecology'—of the past economic growth of today's rich industrialized countries.[32] Also important are the insights of a group of ecological economists who have begun to examine the global ecological consequences of China's and India's industrial growth. The findings of these economists are striking. Their work revolves around the concept of 'social metabolism', which refers to the total flow (or throughput) of energy and materials in an economy that is used to sustain human activity.[33] These flows are measured not in their monetary values, but in biophysical terms—by weight and energy value. According to these scholars, most of the countries in the world are currently undergoing a transition in the social metabolism of their economies from agrarian to industrial forms of social and economic organization. The major implication of this transition is a change in the form of energy on which the economy relies from solar energy (used to produce biomass) to fossil energy (used in industrial production processes). Using material and energy flow accounting based on extensive data-sets, these analysts show how global material and energy flows have increased eightfold over the past century. This increase has not been evenly distributed. Today's industrialized countries, which have already been through a major transition in their social metabolism, have per capita material and energy flows 5–10 times as high as those of developing countries that have not yet fully industrialized.[34]

A key reason why rich industrialized countries have been able to consume such high levels of materials and energy has been their ability to import these resources from other countries (particularly those in poorer regions of the world—a trend that dates back to the colonial era).[35] China's and India's changing social metabolism is now having similar implications on ecosystems beyond their borders and

[32] See e.g. studies of this kind regarding Japan's rapid economic growth, such as Peter Dauvergne, *Shadows in the forest* (Cambridge, MA: MIT Press, 1997); Hall, 'Regional shrimp'.

[33] Marina Fisher-Kowalski and Helmut Haberl, *Socioecological transitions and global change* (Cheltenham: Edward Elgar, 2007); Helmut Haberl, Marina Fischer-Kowalski, Fridolin Krausmann, Joan Martinez-Alier and Verena Winiwarter, 'A socio-metabolic transition toward sustainability? Challenges for another great transformation', *Sustainable Development* 19: 1, 2011, pp. 11–14.

[34] Fridolin Krausmann, Simone Gingrich, Nina Eisenmenger, Kawl-Heinz Erb, Helmut Haberl and Marina Fischer-Kowalksi, 'Growth in global materials use, GDP and population during the 20th century', *Ecological Economics* 68: 10, 2009, pp. 2696–705.

[35] Jan Otto Andersson and Mattias Lindroth, 'Ecologically unsustainable trade', *Ecological Economics* 37: 1, 2001, pp. 113–22; Simron Jit Singh and Nina Eisenmenger, 'How unequal is international trade? An ecological perspective using Material Flow Accounting (MFA)', *Journal für Entwicklungspolitik* 26: 4, 2010, pp. 57–88.

on the planet as a whole. Even though the per capita consumption of energy and materials of China and India is still much lower than those of the industrialized countries, their growing material and energy use is already changing the direction of global resource flows and patterns of resource extraction. These ramifications will likely only intensify as their social metabolism continues to change. According to one estimate, the per capita material and energy use of these countries will rise by a factor of 3 to 5, bringing them closer to the social metabolism of the current industrialized countries.[36]

China's oil consumption, for example, is expected to more than double by 2030 as a result of its social metabolic transition, and much of that oil will be imported. As recently as 1980, China consumed only 1.7 billion barrels of oil per day, most of which was produced domestically. Twenty-five years later, this figure had risen to 7.4 billion barrels per day, and China had become the second largest oil importer after the United States (even though its imports accounted for only 12 per cent of its consumption).[37] According to Sam Raphael and Doug Stokes, in 20 years' time China will be importing an additional 8.6 billion barrels of oil per year from foreign sources.[38] In this context, China has stepped up its search for new sources of oil abroad, for example in locations in Latin America and Africa. The country's consumption of minerals is also rising rapidly, generating a similar intensified search for sources abroad.[39] The implications for local and global ecosystems of China's growing impact on resource extraction and trade are significant and need further scholarly attention.

The ecological consequences of India's economic growth also deserve more attention. Since 1960, its consumption of fossil fuels (largely imported from abroad) has increased by a factor of twelve. India is currently the fifth largest energy consumer in the world, despite the fact that it is only at the early stages of its own social metabolic transition. As that transition continues, its consumption of energy will rise further, a development that will have global economic and environmental implications because of the country's import dependence. According to Simron Jit Singh and his colleagues, if India continues on its current path of industrialization and eventually reaches the per capita material use of an industrialized country such as Japan, its development 'would lead to an increase of global material use by 30%'.[40]

[36] Fridolin Krausmann, Marina Fischer-Kowalski, Heinz Schandl and Nina Eisenmenger, 'The global sociometabolic transition: past and present metabolic profiles and their future trajectories', *Journal of Industrial Ecology* 12: 5/6, 2008, pp. 637–56.

[37] Jesus Ramos-Martin, Mario Giampietro and Kozo Mayumi, 'On China's exosomatic energy metabolism: an application of multi-scale integrated analysis of societal metabolism (MSIASM)', *Ecological Economics* 63: 1, 2007, pp. 174–91.

[38] Sam Raphael and Doug Stokes, 'Globalizing West African oil: US "energy security" and the global economy', *International Affairs* 87: 4, 2011, pp. 903–21.

[39] Michael T. Klare, *Rising powers, shrinking planet: the new geopolitics of energy* (New York: Metropolitan Books, 2008).

[40] Simron Jit Singh, Fridolin Krausmann, Simone Gingrich, Helmut Haberl, Karl-Heinz Erb, Peter Lanz, Joan Martinez-Alier and Leah Temper, 'India's biophysical economy, 1961–2008: sustainability in a national and global context', *Ecological Economics,* forthcoming, 2012, www.sciencedirect.com/science/article/pii/S0921800912000456, accessed 2 March 2012.

Of course, these projections rely on certain assumptions about future technological change and may be overstated. But China's and India's growing demand for energy and materials has already been having important ecological implications, both in local contexts around the world and cumulatively at the global level. With the rich industrialized countries continuing to consume far more per capita than India and China, tensions over access to resources will no doubt intensify, with far-reaching ecological implications. A significant reduction of consumption levels in the industrialized countries could ease some of these tensions, but the prospects of that at the moment seem dim. Close attention to the industrial transitions in emerging powers and their interaction with industrialized countries is essential for understanding some of the more important ways in which the changing international political economy is affecting environmental outcomes.

High and volatile commodity prices

A third key trend that deserves more attention from IPEE scholars is the emergence of high and volatile commodity prices, particularly since 2007–2008. The study of commodity prices has not been at the centre of IPE scholarship since the 1970s, when a spike in prices attracted the attention of the pioneering scholars in the field. At that time, scholars focused mostly on the 1973 quadrupling of the oil price and its implications for the distribution of power and investment flows within the international system. Food prices also shot up to record highs in the mid-1970s, generating some IPE literature on its causes and the use of food as a foreign policy tool in the context of the crisis.[41] These early IPE studies on high commodity prices did not focus much on their environmental implications, although there was a nod towards questions of how resource scarcity more generally was contributing to price pressures.

When commodity prices fell in the early 1980s and remained low for the next two decades, interest in commodity prices declined among IPE scholars, and by the 1990s chapters on the oil crisis and resource trade were being quietly dropped from IPE texts.[42] As the new field of GEP emerged in the 1990s, its textbooks too barely mentioned the issue, despite the obvious contribution of low energy prices to growing levels of fossil fuel consumption and climate change. It was not until oil and food prices spiked in 2007–2008 to levels not seen since the 1970s that scholarly interest in commodity prices suddenly resurfaced, particularly in relation to 'peak oil'.

Some of the new IPE scholarship on this topic has focused on the implications of commodity price hikes for economic and power dynamics in the international political economy. Others have been concerned with explaining the causal factors

[41] Harriet Friedmann, 'The political economy of food', *New Left Review*, no. 197, 1993, pp. 29–57; Emma Rothschild, 'Food politics', *Foreign Affairs* 54: 1, 1976, pp. 285–307.

[42] Some texts that included discussion of resources in the 1980s and into the early 1990s were Robert Gilpin, *The political economy of international relations* (Princeto, NJ: Princeton University Press, 1987); Stephen Gill and David Law, *The global political economy: perspectives, problems, and policies* (New York: Harvester, 1988); Susan Strange, *States and markets* (London: Pinter, 1988).

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behind the price rises—interestingly, often highlighting their intricate connections with the global economic trends discussed in the previous two sections of this article. Most analysts attribute rising commodity prices at least in part to growing demand from rising economic powers, particularly China. The high level of prices and their volatility are also blamed on rapidly expanding financial speculation in commodity derivatives products, particularly those linked to energy and to mineral and agricultural commodities, in the world's leading financial centres—a trend that some have called the 'financialization' of commodities markets.[43]

There has been little attention so far within the mainstream of the field of IPE to the environmental implications of current commodity price trends, and IPEE scholars have not yet explored the issue in much depth. The lack of specific environmental cooperation regimes linked to commodity prices may explain the relative dearth of IPEE research into this issue. Yet there are myriad linkages between commodity prices and environmental outcomes that require further investigation, particularly since most economic forecasts point to the continuation of high and volatile commodity prices for the foreseeable future.[44]

The environmental implications of higher energy prices are likely to be rather mixed. They are encouraging greater conservation and more support for renewable energy sources such as wind and solar (as well as for more environmentally controversial energy sources such as nuclear power). But higher oil prices are also encouraging a scramble for new sources around the world, as well as intensified production of existing sources, often in more remote and/or fragile environments in Africa, the Amazon, the Arctic and the Alberta oilsands. Energy price trends have also made the production of biofuels more economically viable; this development may have negative environmental impacts if land is cleared of forests for biofuel production, thus harming biodiversity, reducing carbon absorption and often degrading land.[45]

Rising food and agricultural prices are also generating developments with important and largely negative environmental consequences. One development is the intensification of industrial agriculture on existing farmland in order to increase production in response to higher prices. It is well understood that the industrial agricultural model has placed serious stresses on ecosystems. These stresses include soil erosion linked to overcultivation, biodiversity loss due to monocultural production and chemical use, and soil and groundwater contamination caused by pesticides and intensive livestock operations. The model also relies heavily on fossil fuels (e.g. to fuel tractors and as key ingredients in pesticides and fertilizer); indeed, agriculture accounts for approximately 20 per cent of greenhouse gas emissions, and this figure could rise with intensification of industrial

[43] See Jennifer Clapp, *Food* (Cambridge: Polity, 2012); Jennifer Clapp and Eric Helleiner, 'Troubled futures? The global food crisis and the politics of agricultural derivatives regulation', *Review of International Political Economy*, forthcoming 2012, www.tanolf-online.com/doi/abs/10.1080/09692290.2010.514528, accessed 2 March 2012.

[44] See e.g. Derek Headey and Shenggen Fan, 'Anatomy of a crisis: the causes and consequences of surging food prices', *Agricultural Economics* 39: supplement 1, 2008, pp. 375–91.

[45] The price-linked ecological consequences of biofuels have been usefully highlighted in a special issue of the *Journal of Peasant Studies*, 37: 4, 2010. More work on the ecological impacts of this price-driven energy extraction is warranted, particularly in terms of its global cumulative impact.

farming methods and technologies spurred by rising food prices. Although the issue is controversial, questions have also been raised about the ecological impacts of the genetically modified crops that are a key component of the industrial agricultural model. Some of these ecological implications of the price-induced turn towards intensification of industrial agricultural methods are beginning to receive more attention, but much more work could be done, particularly as the industrial agricultural model has been strongly advocated by organizations such as the World Bank in the recent period of food price volatility.[46]

High and volatile food prices have also prompted a spate of large-scale land acquisitions in developing countries by foreign investors who aim to develop those lands with industrial agricultural methods or to clear the land of its forest cover in order to plant biofuel crops. This phenomenon has begun to attract the attention of scholars, particularly in the fields of sociology, geography and international development.[47] Much of this new work examines the ecological impact of this phenomenon in specific locations, particularly in Africa and Asia.

There is an urgent need for IPEE scholars to draw on this important work and to make linkages back to the broader global context and the trends outlined earlier in this article, such as the globalization of finance and the growing demand for foreign resources by emerging powers such as China. For example, actors in global financial markets such as hedge funds, pension funds and sovereign wealth funds have been key players in land investments in Africa and other parts of the world. They increasingly see land as an asset in which to invest for a quick return in an era when agricultural commodities, whether linked to food or biofuels, have become 'financialized'. IPEE scholars need to draw out these global-level linkages and power dynamics in order to map out and consider both the local and global-scale environmental impacts of these broader trends.

Emerging global discussions on a set of voluntary guidelines on land acquisition are likely to draw more IPEE work to this area. But, as noted above, it is important that this work go beyond an examination of cooperative governance regimes and their environmental provisions. IPEE scholars also need to address the big picture of why these acquisitions are taking place and how they are driving environmental change.

Conclusion

IPEE scholarship has made many strides in the last two decades. But this scholarship has increasingly been rather narrowly focused on international cooperative initiatives that seek to link economic and environmental issues explicitly. In our view, this approach has unfortunately led to the relative neglect of larger

[46] Tony Weis, 'The accelerating biophysical contradictions of industrial capitalist agriculture', *Journal of Agrarian Change* 10: 3, 2010, pp. 315–41; Clapp, *Food*.

[47] Annelies Zoomers, 'Globalisation and the foreignisation of space: seven processes driving the current global land grab', *Journal of Peasant Studies* 37: 2, 2010, pp. 429–47; Lorenzo Cotula and Sonja Vermeulen, 'Deal or no deal: the outlook for agricultural land investment in Africa', *International Affairs* 85: 6, 2009, pp. 1233–47; Saturnino M. Borras Jr., Ruth Hall, Ian Scoones, Ben White and Wendy Wolford, 'Towards a better understanding of global land grabbing', *Journal of Peasant Studies* 38: 2, 2011, pp. 209–21.

structural trends in the international political economy whose environmental implications are not addressed explicitly by significant international governance arrangements.[48]

One such trend is the globalization of financial markets, whose short-termism, volatility and conceptions of economic value and risk can—although they do not in all cases—work against environmental sustainability. A second key trend is the emergence of newly powerful states in the global economy, such as China and India, whose rapid economic growth is setting in motion important environmental changes at home and abroad. A third is the more recent emergence of high and volatile commodity prices, which has a number of important environmental implications.

As we have noted, it is important that these three trends are studied not just on their own but also together, since they intersect and reinforce each other in significant ways. It is not possible, for example, to research the environmental implications of high and volatile commodity prices without understanding how both global financial markets and the economic growth of rising powers are increasingly driving commodity market trends. Similarly, the environmental consequences of the operation of global financial markets are increasingly affected by the impact of those markets on commodity prices as well as by the investment choices of emerging powers' SWFs.

The environmental implications of these trends are profoundly important to any scholar who is interested in the relationship between the international political economy and the environment. IPEE scholars have the potential to add significant value to our understanding of the environmental consequences of these trends because of their focus on the 'big picture' of global economic structures and processes and the power dynamics within them. But the study of these trends requires IPEE scholars to abandon their comfortable focus on studying existing international cooperative arrangements governing the economy–environment interface. The environmental implications of these trends—both individually and collectively—have few or no treaties, institutions or regimes governing them. They are unlikely to be very prominent on the agenda of the Rio+20 conference if they are even recognized at all by environmental diplomats. To research and analyse them—as well as other important trends we do not have space to discuss here—IPEE scholars need to look beyond cooperation arrangements into the more complex, detailed, everyday functioning of the international political economy. They also need to be willing to read well beyond IR literature and to engage with scholars from more diverse backgrounds such as geography, sociology, ecological economics, development studies and international business studies.

In so doing, IPEE scholars will come full circle back to, and can draw inspiration from, the pioneers of the modern IPE field in the 1970s. Although they largely ignored environmental issues, those early scholars embraced interdisciplinarity, and they asked big questions about the major transformations they were

[48] As noted in footnote 2, it has also led to a neglect of the study of how environmental change affects those larger structural changes in international political economy.

witnessing in the relationships between politics and economics, states and markets, and power and wealth in the international system. In Cohen's words, 'for them, the value of scholarship could be measured not by the sophistication of a model or the elegance of a technique but rather by how much it added to the understanding of the real world'.[49] It is this kind of broad-minded and open intellectual curiosity that IPEE scholars need to embrace if they are to gain a fuller understanding of the changing relationship between the international political economy and the environment today.

[49] Cohen, *International political economy*, p. 8. See also Robert Keohane, 'The old IPE and the new', *Review of International Political Economy* 16: 1, 2009, pp. 34–46.

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