

Two Peas in a Pod: Thoughts on the Future Regulation of Global Food and Finance¹

Introduction

While the financial crisis is forcing the rethink of global regulatory structures in a number of industries, there are two that particularly need to analyze their regulations to ensure they will facilitate sustainable growth and restore consumer confidence. These are the food and finance industries. While not immediately obvious that they should be paired, their stories are similar.

Both industries have moved over the past 30 years from predominately local or national systems to ones that are highly global and integrated². They have developed disaggregated supply chains where the ultimate consumer of the risk is often disconnected from the originator of the risk³. Finally, they are industries where de-regulation has been the prevailing trend and the underlying assumption is that the market generally knows best.

As a result of these developments, intermediaries (namely banks but also insurers, hedge funds, pension funds, sovereign wealth funds, and other institutions in the finance industry and the range of food processors, manufacturers, and retailers in the food industry) have grown in size and are looked to as trusted sources to verify the safety, reliability, and usefulness of the products being offered. These intermediaries are often large multinationals operating across regulatory jurisdictions. As large companies, they suffer from the usual principal-agent problem whereby managers may act more in their own interest rather than in that of the shareholders. Perhaps more importantly, these large companies are often offering what should be viewed as a quasi-public service – i.e. financial services that facilitate economic development and growth and food that facilitates human health and growth – and are expected to be key sources of innovation.

Given the difficulty for consumers to gain transparency into the production process and supply chains involved, it is key that these intermediaries operate according to defined criteria and regulatory expectations. Since these companies are global in nature the regulatory structures must balance national and international regulatory norms and powers. For not only

¹ This article has drawn its ideas on financial regulation from a number of recent documents including various reports from the Financial Stability Forum, the Mar 2008 Senior Supervisors Group report, the Aug 2008 CRMPG III report, the Jan 2009 G30 report, the Mar 2009 Turner Review, and the Jul 2009 Institute of International Finance's report *Restoring Confidence, Creating Resilience: An Industry Perspective on the Future of International Financial Regulation and the Search for Stability*, as well as the author's own experience working in the global banking industry for the past 10 years. With respect to the food industry, the ideas are largely the author's own as informed by a number of prominent authors such as Michael Pollan, Paul Roberts, Marion Nestle, Tim Lang, Tim Josling, and Warren Belasco as well as research by groups such as the UN agencies FAO and IFPRI, the OECD, World Bank, IFOAM, and key NGOs such as Slow Food, Oldways Preservation and Exchange Trust, and OriGIN. For more information on the author's work on food regulation see www.sustainag.org and www.geographicindications.com.

² For finance, see, for example, the Aug 2006 IMF Working Paper *Financial Globalization: A Reappraisal* for documentation of the growth of foreign-owned assets and liabilities from USD 7 trillion in 1980 to 76 trillion in 2004 and an analysis of the potential implications of this growth. For food, see, for example, the annual joint publication of the OECD and FAO projecting developments in agricultural markets the most recent version covering the period 2009 to 2018 available here www.oecd.org/dataoecd/2/31/43040036.pdf and the 2008 World Bank World Development Report, p. 136, for some statistics on the rise of concentration in the global agrochemical, seed, and biotech industries.

³ For finance, see, for example, the Jul 2008 BIS publication *Credit Risk Transfer* www.bis.org/publ/joint21.pdf for an analysis of the expansion of securitization and other credit transfer products (which, at their height, reached a notional value that some put at USD 50 trillion); for food, see, for example, the Jun 2009 US GAO publication *Agricultural Concentration and Agricultural Commodity and Retail Food Prices* www.gao.gov/new.items/d09746r.pdf for an analysis of market developments such as the increase in the market share of the four largest pork processors from 36% to 63% between 1982 and 2006 and the four largest grocery retailers from 16% to 36% between 1982 and 2005 and the concentration of 50% of total farm sales into 2% of farms in 2007.

are global banks national in death (as highlighted recently by Bank of England Governor Mervyn King) but when food chains break down the effects are health issues that ultimately must be dealt with by national and local public health authorities (witness, for example, responses to the outbreaks of BSE and foot and mouth disease).

This paper hopes to make a modest contribution to the consideration of the future regulation of food and finance. It will attempt to identify parallels between the regulatory dynamics in the two industries. This may facilitate cross-pollination of approaches across the industries and help identify useful avenues for further research. The article will not attempt to present comprehensive solutions or to tackle the cross-sector governance issues (e.g. reform of multilaterals, membership of the G groupings of countries, role of the WTO and UN).

Instead it will begin by examining the case for global food and finance and then consider specific aspects of regulation in the two industries. The conclusion will outline some broader themes, as it is not clear how to progress unless we are clear what problems we are trying to solve.

Role of Global Food and Finance

At a time when anything global in scale is up for legitimate question, it makes sense to re-examine the basic arguments for multinational corporations in any given industry. The case for global finance was made most cogently recently by the Institute of International Finance (IIF) in its recent papers. The IIF outlined the following five benefits of a global financial system:

- Provides savers and users of funds the greatest choice in terms of portfolio allocation and financing options, thereby enabling efficient transfer of funds from “excess” savings countries to locations in need of capital.
- Provides integrated management of companies that helps ensure efficient allocation of capital and optimal use of retail depositor savings while also providing internal capital markets that can contribute to financial stability during crises when external market transactions may be blocked.
- Provides financial firms with the flexibility to determine the scale, scope and reach of their intermediation operations, including to emerging markets in a manner consistent with sound risk management and minimization of cost of financial services.
- Accelerates the transfer of financial technology, including state of the art risk management systems, from more advanced financial firms to less advanced firms to the benefit of the efficiency of the whole system.
- The above combined contribute to a more efficient saving-investment process worldwide, better global resource allocation (both temporal and inter-temporal) leading to faster growth of output and jobs.

Each of these points can be debated to a degree and no doubt will be opposed vigorously by the harshest critics of globalization. However, assuming there are benefits to be had along the lines of the above (i.e. assuming that the real debate is a question of what degree of benefit at what price) the goal of regulation should be to ensure an appropriate degree of globalization in light of the potential for negative externalities from a global financial system. These externalities are all too obvious in the current financial crisis as the interconnectedness of the system has shown how quickly financial contagion can travel and the degree to which global banks can suffer from a problem that appears to originate in just one jurisdiction (the reality of course being much more complex as it is the very interconnectedness of the system that creates the conditions in which a problem in one geographic market or asset class can spread to infect others).

A similar description of the potential benefits (and thus the corresponding tradeoffs) can be made for the global food system. Paraphrasing the above list, the following are five arguments for the benefits of a global food system:

- Provides farmers and consumers the greatest choice in terms of specialization of production and consumption, thereby enabling efficient use of natural resources and creation of additional consumer welfare.
- Provides integrated management of companies that helps ensure efficient allocation of capital and other scarce resources (land, water, energy) while also providing internal distribution chains that can contribute to stability during food safety crises when certain exports may be banned due to health concerns.
- Provides food companies (taken broadly to include input providers such as seed and fertilizer companies, processing firms and other foodstuff manufactures, as well as retail outlets including those such as Walmart and Carrefour that offer food along with other consumer goods) with the flexibility to determine the scale, scope and reach of their intermediation operations, including to emerging markets in a manner consistent with sound risk management and minimization of cost of food products.
- Accelerates the transfer of technology, including state of the art risk management systems, from more advanced firms to less advanced firms to the benefit of the efficiency of the whole system.
- The above combined, contribute to a more efficient food production and distribution process worldwide, better global resource allocation (both temporal and inter-temporal) leading to faster growth of output and jobs.

Again, each of these points can be debated particularly by those who attach a particular value to a more locally based system composed of smaller firms. However, assuming that there is no particular value bias to small or large the relevant question becomes how can we develop a regulatory structure that helps ensure an appropriate scale of firms where “appropriate” is determined by allowing for the capture of the benefits of scale in a manner that limits the potential for negative externalities of that scale

The externalities in the case of agriculture are also becoming all too apparent as the “costs” of industrialized agriculture in terms of environmental damage from overuse of carbon-based fertilizers, misallocation of water, and land stress due to concentration of certain production processes are becoming well documented.⁴ Additionally, there is also a “contagion effect” in food as in finance as can be seen from recent health scares in the US (e.g., peanuts and spinach contaminated with Salmonella), earlier scares in Europe and Latin America (BSE and foot and mouth disease), and recent examples in China (e.g. melamine in powdered milk and pet food). Finally, there are more general consumer health issues in terms of the contribution of highly processed foods and meat-intensive diets to obesity and long term chronic disease rates.

Topics and Tools for Regulation of Global Food and Finance

Given the above, it is useful to look at specific areas of regulatory involvement in global food and finance. The below is not a comprehensive discussion of all current or potential regulatory areas or tools applicable to food and finance. Instead, it highlights some key analogies and thus areas where one sector may usefully learn from the other. It also may highlight areas where additional research should be conducted to identify the most useful regulatory tools.

Capital and Soil

⁴ See, for example, the *International Assessment of Agricultural Knowledge, Science and Technology for Development* at www.agassessment.org/ for an agricultural equivalent to the IPCC reports on climate change.

Capital for finance is like soil for food.⁵ Each provides the base from which the productive activity in the respective sector grows. Thus, the quantity and quality held must be sufficient to deal with the natural ups and downs of (economic and weather) cycles. While it can be supplemented for a period from external sources (governments in finance and synthetic fertilizers in food) ultimately it must be a self-sustaining system in order to add value to the overall economy. Otherwise it will draw resources away from other more productive uses.

In the finance industry, the focus of regulators at the moment is on determining the appropriate quantity and quality of capital as the amount held by many global banks prior to the onset of the financial crisis was clearly insufficient. While there are debates around how capital is measured and the way in which the minimum requirements are calculated, the general idea of taking a “risk-based” approach (i.e. tailoring the amount of capital to the nature and extent of the business activities undertaken by a bank) as embodied in the Basel II regime is not seriously at question. Thus, the goal is to re-examine the calculation mechanisms to ensure they take due account of risks and the potential for truly unexpected or regime changing (so called “black swan”) outcomes. Particular areas of focus at the moment are on measures of portfolio level market risk and the amount of capital required for key activities such as securitization where, in theory, the risk is transferred from a single financial institution to a broader set of investors. There are also proposals for banks to retain a portion of certain exposures (i.e. “to keep some skin in the game”) to ensure they have incentives to more closely monitor risks of products they originate. At the extreme, all products could be required to go through a pre-approval process via a consumer financial products safety commission.⁶

In the food industry, the parallel may lie in the various regulations and other standards that help govern production processes. Key regimes include organic/bio regulations, environmental standards and norms (e.g. integrated pest management, shade-grown), and other key systems that attempt to define production standards (e.g. Geographical Indications and private label brands). The same issues of determining the appropriate way in which to measure sustainable outcomes and therefore determine the regulatory standard confronts food as it does finance. One only needs to look at debates around what “counts” as organic to see the tension between lowering norms to facilitate larger scale production and raising the bar on standards to achieve a certain outcome. Regulatory tools such as requirements for HACCP systems (i.e. Hazard Analysis Critical Control Point – a system to ensure food safety by ensuring actions are taken at key points in production processes to limit the possibility for hazards to be introduced into the final product) are intended to ensure that a disaggregated chain of production (akin to the securitization structures for finance) where the generator of the risk is separated from the consumer of the risk by a long production chain can be adequately controlled for health and safety. This is one area where finance may be able to learn from food as quality control regulation (whether consumer product safety or operational risk) has historically been of second priority in finance.

Liquidity and CAFOs

The ability to centrally manage the inflows and outflows of resources in a more efficient manner is one of the presumed benefits of scale. In the case of finance, this is essentially the challenge of liquidity management where banks must match the claims on deposits and other

⁵ The analogy is not exact of course as crops can be grown without soil using, e.g., hydroponic methods. However, the point still roughly holds as even with hydroponics there are different methods that can be used and different standards applied.

⁶ See the summary of the U.S. House of Representatives bill proposing a new Consumer Financial Protection Agency for the outlines of one proposal - www.govtrack.us/congress/bill.xpd?bill=h111-3126&tab=summary

liabilities with the returns generated by their assets and other incoming revenues. A potential parallel in the food industry is the development of Concentrated Animal Feeding Operations (CAFOs) which essentially translate resource inputs (in the form of animals) into outputs (processed meat) ideally in a manner that is both safe and sustainable.

In the finance industry, liquidity and funding is under close scrutiny particularly in light of the global vs. local tension (see below for further considerations). Many banks operate global treasury operations that sweep funds from any number of jurisdictions and currencies into a central pool and then conduct foreign exchange operations to better match their funding and payment needs (including dividends to shareholders). This is efficient from a single institution point of view as it allows banks to secure funding in whichever currency or market offers the best terms and then redeploy that capital in whichever currency or market offers the best returns. However, the Lehman and Icelandic bank bankruptcies made clear that this model does not work so well from a national regulatory point of view where obligations are to local citizens and depositors. If funds are not available in a jurisdiction to satisfy those obligations then it is not clear that a truly global operation is acceptable from a regulatory point of view. Ideas being considered by regulators are mechanisms that would ensure global banks hold more local assets that can be used to satisfy their local liabilities. At the extreme, there would be a requirement for full local funding of all local activities. This would effectively shift the global banking model closer to something akin to a franchise model in food.

In the food industry, the parallel with CAFOs is not exact. Where there is a parallel, however, is in the intense concentration of the transformation activity in a central operation. This supports a broad network where often the input providers are contractors who are given very specific production process requirements by the CAFO or food processors. The outputs are then distributed on a wide basis as they have been able to be produced at a large scale which supports national or international distribution and supply chains. The CAFO presents problems because of its potential to ignore the holistic context of the overall value chain (much as the central treasury operation of global bank ignores the national funding needs). CAFOs are often maligned for being the source of intense environmental damage (an unpriced externality) as well as the source of systemic spread of contamination. Barring the full banning CAFOs, the key challenge becomes how to regulate them to ensure their negative externalities are limited to an appropriate degree. Forced internalization of negative externalities through environmental payments for their local effects (akin to forcing banks to hold some funds to cover local liabilities) may be one mechanism. Enhanced direct oversight of operations (akin to the regulators who sit on-site in financial institutions) may be another. However, it is not clear that these are fully satisfactory solutions from a consumer point of view as recent trends (e.g. rise of the Slow Food movement internationally or the “locavore” movement in the US) and shifts by multinationals (e.g. McDonalds campaign to emphasise its local sourcing of beef, potatoes, and grain Switzerland) show a rising demand by consumers for local and small-scale production.⁷

Accounting and Precaution

Both food and finance have to grapple with the challenge of determining “what” and “how” to count. Consistent and agreed accounting conventions provide a basis on which investment decisions can be made with confidence and also can help to prioritize activities such as risk management and regulatory oversight. There are controversies in each industry that are connected to the issues noted above.

⁷ For a brief overview of the food market in Switzerland and how the local and Slow Food trends play out in a market that has traditionally been small scale and localized see the following news brief www.swissinfo.ch/eng/front/Swiss_quick_to_move_into_Slow_Food_fast_lane.html?siteSect=105&sid=11211921&cKey=1253352379000&ty=st For a discussion about the rising interest and local and quality food in the US, see an unpublished manuscript by the author, *A Short Paper on US Food Issues*, available at www.sustainag.org/call.html.

In the finance industry, there have been significant accounting controversies for a number of years which were intensified by the financial crisis. The most prominent of these is where and how to apply “mark to market” or “fair value” principles as specified by International Accounting Standard (IAS) 39 (*Financial Instruments: Recognition and Measurement*). Banks have traditionally held certain assets to maturity (e.g. loans and receivables) which were thus placed into a “loan” or “credit” book and accounted for at historical cost. However, with the advent of securitization many of these assets became tradeable and, in theory at least, capable of being held in a “trading” or “market” book (which often mean lower capital requirements particularly when such assets qualified for high ratings from rating agencies). Thus, they started to become valued at market cost. This was useful in a market of rising prices but had deleterious effects (especially on capital) when markets turned and assets were greatly devalued or not tradeable. In fact, it was the combination of market to market accounting and the lack of markets that some claim led to too extreme writedowns which in turn forced banks to raise capital. Another accounting controversy in finance is to determine how (or even whether) to account for changes in a bank’s own debt in its periodic earnings. The somewhat perverse consequence that results from mark to market accounting here is that a bank whose own credit rating declines (presumably due to concerns about its ongoing health) will show an increase in “earnings” because the replacement cost of its debt is less. At the extreme, the moment before a bank goes bankrupt it will show “infinite” earnings due to the mark to market accounting treatment of its own credit.

In the food industry, there are also challenges with “what” and “how” to count. The precautionary principle is the locus of this controversy. This principle, which has been used to justify bans on the use of genetically modified crops and importation of hormone treated beef in the EU, states that in the face of scientific uncertainty of the outcomes resulting from the use of certain techniques or methods of production one should proceed with caution including outright prohibitions against use. There is a parallel here with securitization in that the proponents of genetically modified crops and hormone treated beef will argue that the precautionary principle is used unfairly to prevent further use and thus deprives the broader market of the benefits of a useful technology (much as defenders of securitization argue that increased capital requirements or more stringent accounting standards will deprive the broader economy of the benefits of securitization that expands access to credit and thus permits higher growth). Thus, what we count and how we count does help determine what technologies are used and how widely they are adopted. Additional “counting” issues in food include the extent to which climate change effects (from use of carbon based fertilizers or land use changes) should be included in agriculture production prices. The cost of environmental damage from industrial agriculture (or conversely the value of environmental services provided by sustainable forms of agriculture) is another “pricing” issue in the food industry. In the end, what and how to account often has a heavy values-laden component and it is difficult to claim there is a single objective truth.⁸

Size and Scale

This article has been motivated directly by the increased scale and concentration in both food and finance. Finance itself is actually still a fairly decentralized industry in terms of the absolute number of firms and the market share of individual firms on a global level. However, it is true that the institutions operating globally dwarf the size of those seen before (and in some countries such as Switzerland balance sheets of the global banks are bigger than the size of the economy) and thus create the potential for contagion merely by their size as denoted by the “too big to fail” label. The food industry, particularly in the US, has become concentrated to a degree also heretofore unseen which has driven recent announcements by the US

⁸ See the discussion below about global vs. local for some further consideration of the potential “breathing space” value provided by precautionary approaches.

Department of Justice that it will adopt more vigorous oversight in the agriculture sector than before.⁹ Scale is part and parcel an issue of globalization and there are parallels between the sectors.

In the finance industry, some have suggested that any firm that is “too big to fail” is merely “too big” and thus must be downsized. Various measures can be used to accomplish this. Some have advocated a return to Glass-Steagall type legislation that would separate commercial banking from investment banking. Opponents to this cite the fact that European banks have traditionally operated a universal banking model and yet were not the proximate cause of the financial crisis which had its origins in the US housing market. Others have suggested that simple and absolute leverage ratios should be applied to limit the overall size of any given institution’s balance sheet. However, the more extreme of these measures do not seem to be winning the arguments these days. Instead, regulators and the financial industry seem to be concentrating on a range of measures that can enhance transparency and thus put all in a better position to deal with any adverse consequences of the failure of an institution that is particularly large in an absolute or relative sense. Among the proposals made by the IIF in its July 2009 report are the following:

- Require risk management improvements at banks
- Enhance supervisory oversight of firms with systemic relevance (which is not necessarily based only on size) while keeping a level playing field in terms of regulations
- Improve market infrastructure to enhance transparency (e.g. though central clearing of standardized credit default swaps (CDS) and over the counter (OTC) derivatives and recording all trades not centrally cleared in a central depository)
- Agree on cross-border wind-down procedures for any global institution that allows for orderly exits and fair burden sharing between investors and creditors

Additionally, a number of regulators have called for banks to maintain so-called “living wills” that specify how they will be wound-down in case of financial distress or default.¹⁰

In the food industry, there are obvious concerns over concentration and size as noted above. This is not only because of the potential for the abuse of market power (e.g. some cite the increase in vertical integration, either de jure or de facto through the control of supply chains by seed companies and meat and grain processors, as a reason for continued poor returns for farmers and as a facilitating factor in the increase negative externalities to the environment and human health) but also because the scale itself may be one of the contributing causes to the rapid spread of contamination once it enters the food chain (witness here the recall of over 3000 consumer products when the Peanut Corporation of America found salmonella in its peanut processing plant). The way in which the negative implications of scale can be addressed is as problematic in food as in finance. Traceability measures (and safety control regimes liked HAACP) are intended to allow regulators to respond quickly to health hazard concerns. However, there are legitimate concerns over whether firms are forced to truly internalize their potential for harm as witnessed by the rapid bankruptcy of the Peanut Corporate of America when the salmonella problems rapidly grew. Perhaps capital regulation or a version of deposit insurance for food companies (which in fact the proposed Food Safety Acts now being considered in the US Congress seem to contemplate in part with their

⁹ See the GAO study cited in footnote 3 for detail on food sector concentration and the following announcement from the US Department of Justice regarding its intent to examine this concentration for potential antitrust concerns - www.usdoj.gov/opa/pr/2009/August/09-ag-771.html

¹⁰ See the September 2009 publication, *Report and Recommendations of the Cross-border Bank Resolution Group*, available at www.bis.org/publ/bcbs162.htm for the latest regulatory thinking regarding how to address these issues. Specifically, the Basel Committee has made proposals in the following three areas: strengthening of national resolution powers and their cross-border implementation; institution-specific contingency planning; and limiting the impact on the market of the failure of a financial firm by actions such as further strengthening of netting arrangements.

requirements for firms to pay at least nominal registration fees when filing their health safety plans) would be a start at developing mechanisms to deal with the potential negative consequences of scale in the food industry.¹¹ Additionally, as note above, there is a general trend toward having stronger local food “sheds” (particularly in the US) which is a reaction to concentration and scale in the food industry. This is being driven by consumers but also facilitated actively by governments (e.g. see the new *Know Your Farmer, Know Your Food* campaign by the U.S. Department of Agriculture).

While this article will not treat aspects of size in detail, one additional point may be made regarding leverage.¹² Leverage and the mechanisms (e.g. short term funding) used to finance that leverage have been cited as primary causes of the financial crisis and reducing this leverage is seen as one of the pre-conditions for a return to sustainable economic growth. One of the most dangerous aspects of financial leverage is of course the thin margin for error it creates (e.g. a bank on 40 to 1 leverage will see its equity capital base wiped out with just a 2.5% loss in value of the assets financed by that capital). Leverage also was dangerous in the financial sector because of the way in which it was created – i.e. often financed through short term loans (in that sense not so different from what happened to many emerging Asian countries in the late 1990s). A somewhat similar dynamic can be seen in the food industry when one considers the current level of food production in relationship to actual consumption. Thus, the analogy becomes one between bank balance sheet growth and growth in food production capacity.

The FAO has estimated minimum daily energy requirements at 1950 kcal per person per day. This must be compared against current production of approximately 4600 kcal per person per day and actual average consumption of 2000 kcal per person per day.¹³ While 1700 kcal per person per day (1300 on a net basis) are effectively “lost” through the inefficient conversion of grain calories to meat calories (e.g. while feed conversion ratios will differ it generally takes 7-9 calories of grain to produce 1 calorie of beef, 4-5 calories of grain to produce 1 calorie of pork, and 2-3 calories of grain to produce 1 calorie of poultry¹⁴), this still leaves 600 kcal lost between the field and food processors and 800 kcal lost in distribution, retail sales, and institutional and household use. Thus, approximately 30% (and as much as 50% in developed countries) of global food production is lost as waste.

This inefficiency means that the global food system has effectively been “leveraged” to produce many more calories than are actually required.¹⁵ In essence, the food system requires extensive input use of scarce resources (land, water, energy) to produce excess food to compensate for the waste that will occur after the food is produced. This means that the

¹¹ See section 743 in the proposed bill H.R. 2749: Food Safety Enhancement Act, a summary of which is provided at www.govtrack.us/congress/bill.xpd?bill=h111-2749&tab=summary. The corresponding US Senate bill is S. 510: FDA Food Safety Modernization Act, a summary of which is available at www.govtrack.us/congress/bill.xpd?bill=s111-510&tab=summary. Some have suggested that these fees should be raised significantly (and thus approximate more closely deposit insurance fees in finance). See, for example, commentary by Bill Marler here www.marlerblog.com/2009/08/articles/lawyer-oped/a-friday-and-saturday-night-read-hr-2749-food-safety-enhancement-act-2009-so-whats-really-in-it/

¹² See the article by Emilios Avgouleas in this volume for a more detailed discussion.

¹³ See, e.g., the work of Vaclav Smil cited in the *Waste: Uncovering the Global Food Scandal* by Tristram Stuart (2009).

¹⁴ See, e.g., [ftp://ftp.fao.org/docrep/fao/010/a0701e/a0701e.pdf](http://ftp.fao.org/docrep/fao/010/a0701e/a0701e.pdf)

¹⁵ This is not saying anything about where those calories are produced and thus about the distribution of that food to ensure caloric requirements are met in all individual countries. This is an issue of food security.

externalities (e.g. environmental) arising from agriculture have been scaled beyond that which is actually required for productive activity. While there are ways to minimize the effects of these externalities (e.g. through expanded use of organic or hydroponic production methods), one has to wonder whether a better approach might be to seek more efficient calorie usage through either better infrastructure to produce and distribute food, better education on the cost of wasting food, and even potentially conversion from meat-based diets to plant-based diets.

Global vs. Local

The very nature of a globalized market almost guarantees a tension between a globally operated business and local regulation. This theme runs throughout each of the issues described above. Both food and finance have attempted to balance the need for global regulatory standards with national interests through international regulatory standards set by groups such as the Codex Alimentarius and the Basel Committee on Banking Supervision (and corresponding bodies for securities and insurance). These groupings allow national regulators to meet to discuss the development of common regulatory norms. The question many are asking today is whether these institutions are sufficient in light of increasingly globalized markets and the impacts of market failures.

In the finance industry, the financial crisis highlighted a number of lacunae in the international regulatory landscape. Commentators often criticized the lack of coordination among regulators when responding to events particularly by citing country specific (and at many times institution specific) decisions about capital injections, liquidity requirements, leverage ratios, and deposit insurance. On the whole and given the ferocity of the financial market developments in 2007-2009, regulators and central bankers probably should be congratulated cautiously for their cooperation. What seemed to be a lack of coordination often was due to differences in legal authorities and mandates. That said, the financial regulatory community, through the G20 decision making process, has sought to improve future coordination by a range of measures including adding key emerging market countries to groupings like the Basel Committee and expanding the scope and remit of existing groups like the Financial Stability Board to focus more broadly on macroprudential supervision. International banks that depend on globally coordinated markets have naturally been concerned about the potential for regulatory fragmentation as highlighted by the IIF report noted above (in which the IIF calls for an inter-governmental accord on financial markets and financial services). However, one has to wonder whether, given the apparent ease and pace with which financial markets were on a path to unravel in 2007-9, a bit more “sand in the gears” would not actually be a good thing (e.g. one could see the well publicized call by UK FSA Head Lord Turner for a Tobin Tax in this light).

In the food industry, the issues are largely the same although focused on a different aspect of the market. The largest form of regulatory fragmentation in food comes in the form of potential barriers to trade through production process regulations. Examples include the long running dispute between the US and the EU over the importation of hormone treated beef and genetically modified crops. Countries also have often been quick to impose import bans in response to disease outbreaks such as BSE and foot and mouth disease. While these do come at the cost of some “efficiency” in the system they seem to be useful safeguards given the integrated nature of markets. As for the disputes over values (e.g. hormone treated beef and GM crops) there may be some embedded benefit in different regulatory regimes here as well. While those who favor GM crops do have some ground for complaint over continued EU bans in the face of the lack of any scientific demonstration over potential harm for GM crops, it is interesting to note Walmart has recently decided to phase out milk from cows treated with growth hormone from its supply chain. This was done largely in response to consumer demand but one has to wonder whether that sentiment would really have ever developed if other significant markets such as the EU had not put a moratorium on the use of the hormone in the first place. Thus, policy differences and their enforcement through different regulations

that actually restrict the amount of globalization permitted, may provide useful “breathing space” for the science to become more conclusive (as intended by the precautionary principle) and for consumer values to settle (in cases where the science may be seemingly clear but consumers have certain preferences for other reasons) before truly global market shaping decisions are made.¹⁶

Conclusion

This article has not attempted to identify clear answers for the future of global food and financial regulation. Indeed, ultimately the regulatory structure we want may depend on what we decide to value and the price we are willing to pay for that. The shift toward a globalized, industrialized economy built on scale in both food and finance has created (theoretical) efficiencies. These efficiencies have allowed economic growth (as measured by GNP with all its inherent flaws¹⁷) to increase while the percentage of the labor force involved in agriculture and manufacturing has decreased.

What has this achieved? Low priced goods, a service-based economy, shorter working hours and earlier retirements (although a number of these may not be sustainable in their current form in light of demographics, government budgets, and associated negative environmental externalities). Is this good? That is a value judgment. To take a different example, my own view on the social value of blogs, Facebook, and Twitter is sure to differ from that of others. What is clear is that we have made a shift toward an economy where we expect goods to be cheap and individuality to be one of the primary overriding norms. This has been facilitated by the shift toward “big” food and finance.

However, we must not fool ourselves. There are no free lunches. If we want more local, more sustainable, more small-scale production then it will come at a price - a higher search cost, a higher production cost, a higher labor cost. It will shift the composition of employment and re-arrange value chains. That may be good or bad depending on your point of view. However, we should be careful not to throw the baby out with the bathwater as there is value in scale and large corporations.¹⁸ The days of the citizen farmer or a nation of shopkeepers are probably gone forever and we need to figure out how best to balance scale and efficiency with sustainability and resiliency in the system.

Debates over monetary policy (and whether it is better to target asset price bubbles as they inflate or just wait to clean up the consequences when they burst) have a parallel in the debate over agriculture subsidies (and the potentially deleterious environmental and health effects resulting from subsidization of corn, sugar, and other primary commodities). At the extreme, one could compare the effect of too loose monetary policy in finance to the excessive corn subsidies in the food industry. Both achieve a certain policy goal (nominal growth through cheap finance and nominal calories through cheap food) but do come at a cost that is often not measured. When we talk about regulating finance or regulating food we are really talking about moral and value choices about the kind of world we want to live in and what we consider "value" in the first place. This choice may be a developed world luxury right now

¹⁶ With respect to GMOs, there are no signs yet that consumers in countries that permit their use are going “GMO-free” to the extent that has occurred with regard to milk from hormone treated cows. The reason for this (e.g., lack of knowledge, lack of concern) is unclear. If this continues, however, then at some stage one may have to conclude that “the market has spoken” and consumers have expressed their value preferences. At that point, it will become more difficult for regions such as the EU to maintain de facto moratoriums on GMO use.

¹⁷ See the study produced by the Commission on the Measurement of Economic Performance and Social Progress chaired by Joseph Stiglitz for a good analysis of the weaknesses in the GNP measure and alternatives way to achieve a more holistic measure of societal value that takes better account of externalities and other aspects of social value - www.stiglitz-sen-fitoussi.fr/en/index.htm

¹⁸ See, e.g., discussion of the role of large corporations in the 29 August 2009 edition of *The Economist*.

but it is also sets an example that the emerging market countries may choose to follow or turn away from.

At the end of the day, this is the reason for democratic governments. Democracy must reconcile the competing concerns and find the balancing compromise. Regulations and regulators, corporations and managers, producers and suppliers are merely tools. The ultimate decider is the customer and the voter. What we can do however is to shine the light in the dark corners to illustrate why the world is shaped the way it is and what the implications of certain kinds of regulations may be. In the end, the resulting world we live in is shaped by the choices of us all in our individual and collective capacities.