The Tobacco Global Value Chain in Low-Income Countries

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This research was prepared on behalf of the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC) Secretariat and the Division on International Trade in Goods and Services, and Commodities at the United Nations Conference on Trade and Development (UNCTAD), with the goal of mapping the tobacco global value chain. The opinions expressed in this paper are those of the authors and are not to be taken as the official views of the WHO, FCTC, the UNCTAD secretariat, or its Member States. The report is based on secondary research, including a comprehensive literature review and data analysis. UN Comtrade, Euromonitor, FAOSTAT, WITS, and other databases were used to identify trends in tobacco production, trade, and demand and to develop the global value chain analysis. Recommendations on trade policy, diversification, and crop substitution are based on existing case studies and other literature.

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Acronyms

BAT	British American Tobacco
CNTC	China National Tobacco Corporation
EU	European Union
FTLR	Fast Track Land Reforms (Zimbabwe)
FAO	Food and Agriculture Organization of the United Nations
FCTC	Framework Convention on Tobacco Control
GVC	Global Value Chain
JTI	Japan Tobacco International
MNC	Multinational Corporation
PMI	Philip Morris International
STG	Scandinavian Tobacco Group
UK	United Kingdom
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
US	United States of America
WHO	World Health Organization
WITS	World Integrated Trade Solution
WTO	World Trade Organization

1. Introduction

The objective of this report is to use a global value chains (GVC) analysis to understand how the changing dynamics of the global tobacco industry are affecting producers in low-income countries that are heavily reliant on the tobacco industry. Growing evidence of the negative health effects of smoking has led to increased adoption of tobacco control measures around the world. Although the overall goal of tobacco control is to protect public health, there are also concerns about whether decreases in demand as a result of tobacco control policies negatively impact small producers and increase poverty—especially in highly tobacco-dependent countries, such as Malawi and Zimbabwe. As a result, policy debates have focused on the question of "crop substitution"—under what conditions are producers more likely to successfully shift away from tobacco production and toward diversification and substitution of alternative crops and livelihood strategies? However, for a variety of reasons, crop substitution has been challenging to implement.

By situating these questions in the broader context of the changing tobacco GVC, this report offers new perspectives and avenues for investigating the viability of economic development pathways out of tobacco that are remunerative and sustainable for smallholders. Specifically, GVC analysis suggests that the end markets, governance structures, and institutional arrangements for tobacco production are all changing in important ways, each of which effects the position of small producers. Rather than declining, demand for tobacco products is actually growing due to the expansion of end markets in Asia, especially China. Moreover, consolidation among both the global tobacco multinationals and leaf merchants has enhanced their market power vis-à-vis producers. Finally, the growth of outgrower schemes, in which the buyer provides producers with inputs and credit, has increased producer access to the tobacco GVC, while at the same time exposing them to the risk of entering into cycles of debt and dependency on tobacco. Based on this research, we argue that tobacco-related policy interventions should target a broader set of rural economic development, institutional capacity building, and regulatory initiatives (rather than a narrow focus on crop substitution) in order to improve the success of tobacco alternatives for small producers.

Compared to other approaches, GVC analysis provides a more comprehensive understanding of how the tobacco industry—in different country contexts—is shaped by external factors, such as demand shifts, and internal factors, such as consolidation. By definition, GVCs are the globally dispersed networks of firms and other institutional actors that coordinate to produce given goods or services for consumption (Gereffi et al., 2005). GVC analysis seeks to understand how these networks are organized, reconfigured, and coordinated at different levels—national, regional, and global. Typically, GVC analysis is conducted at the sector or product-specific level, and it includes an examination of actors involved, stages of production in the chain, trade patterns, market dynamics, and governance structures to inform policy that promotes economic and social development (Gereffi & Fernandez-Stark, 2011).

Section 2 of the report provides a general description and analysis of the tobacco GVC: the stages of production, activities performed, and actors involved. Section 3 focuses on how the geographies of tobacco demand and supply are changing, analyzing the shift away from traditional markets in the United States (US) and European Union (EU) and into Asia. Section 4 examines how governance is changing in the tobacco GVC as the industry consolidates and expands into Asian markets. Section 5 turns to key trends in trade policy related to tobacco, analyzing the ongoing debate between advocates of liberalization and tobacco control. We review the literature on how these trade policies and debates impact trade flows and assess whether any clear patterns emerge from the case study countries—Malawi, Zimbabwe, and Indonesia. Section 6 reviews the literature on substitution to investigate the challenges and opportunities for crop substitution. Section 7 contains brief case studies of Malawi, Zimbabwe, and Indonesia. The case studies shed light on the evolution of the tobacco industry in specific countries, the role of the government in promoting or regulating the industry, and the country's competitive advantages and challenges. Finally, Section 8 of the report concludes with an assessment of the findings and explores new avenues for policy intervention and research.

2. The Tobacco Global Value Chain

2.1. Overview of the Global Tobacco Industry

The tobacco GVC is geographically extensive and the market is growing. Although there are several kinds of tobacco products, including cigarettes, cigars, chewing tobacco, and cigarillos, cigarettes make up roughly 90% of tobacco exports, and thus most of the analysis in this report focuses on these principal products (UN Comtrade, 2013).[1] The sector is expanding both in terms of the overall demand and exports. Globally, the size of the market for cigarettes has grown from 5.26 trillion sticks[2] in 2000 to 5.81 trillion sticks in 2012—an increase of 10.5% (Euromonitor, 2013a). The total value of exports of raw tobacco has also increased 51% over the last decade, from US $6.49 billion in 2000 to US $9.79 billion in 2011 (UN Comtrade, 2013).[3]

The tobacco industry is extremely concentrated and has become more so over time. A small number of tobacco companies and leaf buyers have a high degree of market power over the supply chain, while small farmers generally have very little bargaining power. Although tobacco is still produced in a variety of different arrangements, to ensure supply, "outgrower" or contract-based production models have become the dominant way for leaf buyers to set up inter-firm relations. Under these models, the buyer may provide inputs and credit to the producer, either individually or through collective groups of 10-30 farmers, known as 'tobacco clubs'. In return,

[1] The Harmonized System (HS) codes used in UN Comtrade for this report were: Cigarettes: HS 240220, Raw tobacco: 240120, Cigars, cigarillos, etc.: HS 240210, Refuse: 240130.

[2] In this report, references to sticks refer to individual cigarettes as well as the equivalent in roll-your-own tobacco sold.

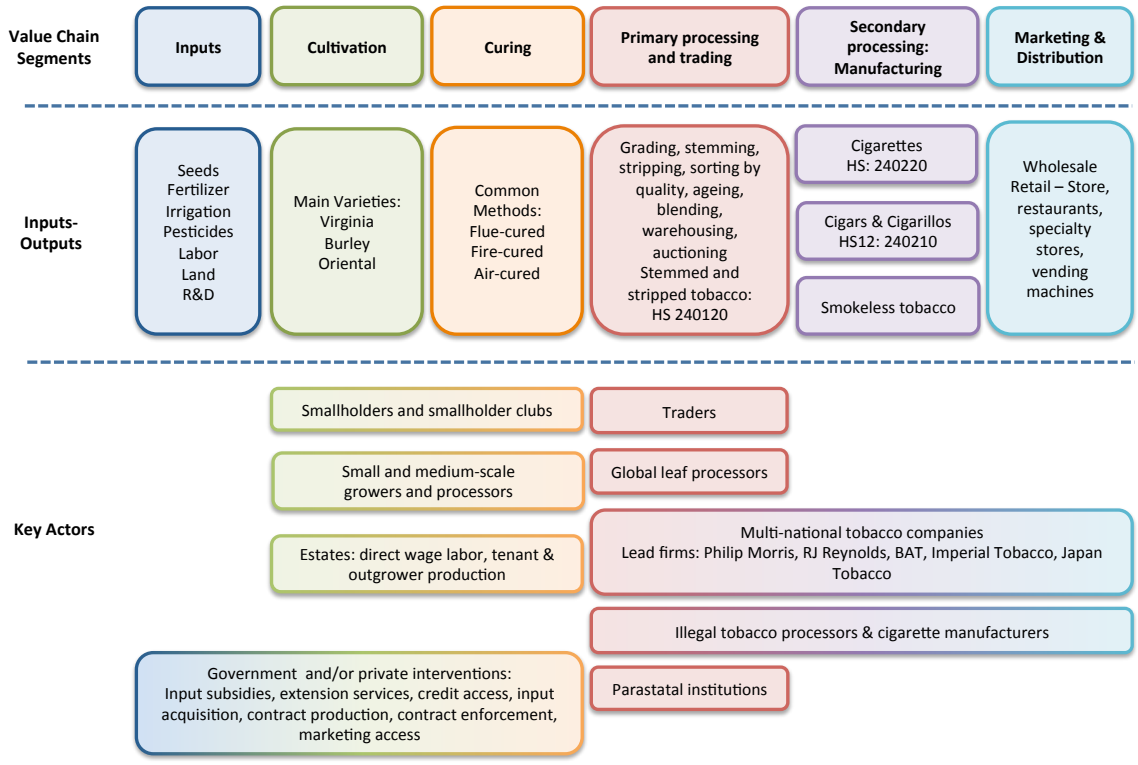
[3] These figures have been adjusted to 2011 dollars based on the Bureau of Labor Statistics Consumer Price Index calculator, http://data.bls.gov/cgi-bin/cpicalc.pl (Accessed November 23, 2013).

the tobacco producers agree to supply the specified amount of raw tobacco once it is cultivated and assumes the risks incurred in cultivation (Negri & Porto, 2008).

2.2. The Value Chain

This section provides a brief summary of the stages of production for tobacco, describing the activities involved, the input-output structure, and lead actors for each stage of the chain (Figure 1). Notably, there are three distinct post-harvest stages for tobacco, which often occur in different locations and under different institutional arrangements: (1) Curing, which is mostly done on-farm and involves drying green tobacco leaf, and then two processing functions; (2) stemming, stripping, and blending tobacco; and (3) transforming raw tobacco into a finished product, such as a cigarette. The most common varieties of tobacco are Virginia, burley, and oriental tobacco and the inputs, production processes, and final products vary according to the variety grown (International Tobacco Growers' Association, 2013b). These varieties also have different impacts and infrastructure requirements. For example, wood is often used for fire-cured and flue-cured tobacco (Virginia) which can contribute to deforestation, while other varieties (burley) are air-dried.

Figure 1. Tobacco Global Value Chain



Source: Authors.

Inputs – Land, Labor, and Physical requirements for Competitive Production

Tobacco is a highly labor-intensive agricultural commodity. Compared to other crops, tobacco is more labor-intensive because it is technically challenging to mechanize. This makes tobacco farming an important source of employment, although this often takes the form of unremunerated family labor, seasonal labor, and child labor (Commission of the European Communities, 2003; Otañez, et al., 2006). While research in Zimbabwe suggests that gross returns to labor are lower for tobacco than for crops such as wheat and roses, it also finds that they are higher than traditional food crops such as maize or groundnuts (Keyser, 2002). The inputs include seeds, moderate to heavy use of water, fertilizers, herbicides, and insecticides (Pain, et al., 2012). The availability of supportive services at the input stage, such as affordable agro-chemical inputs or credit, can make a big difference to the competitiveness and profitability of the crop (see Box 1). Although the arrangements for delivering these services vary, increasingly buyers are providing them through outgrower contracting schemes. In the past, however, it was more common for producers to pay for these services themselves (favoring larger estates) or for the state, parastatal marketing boards, and/or growers' associations to provide assistance in one form or another

Cultivation[4]

The cultivation process requires specific biophysical conditions, and the soil quality, climate, and access to irrigation systems affect both the yield and quality. Seeds are sown in seedbeds for two months and then transplanted to the field. Producers treat the soil with chemicals and/or burning to control for pests and disease, and then apply fertilizer. The plants are "topped" once a flower grows and primed (removal of new growth) to promote leaf expansion and maintain quality. When ready, the plant is harvested, often by hand with machete-like knives. Although maintenance and harvesting of the tobacco plants requires a very high investment of labor hours, producers tend to command a low share of the total value of the final product. From 1980 to 1998, the producer share of the price of a pack of cigarettes declined from 7 to 2 cents, while the share of the tobacco MNCs increased from 37 to 49 cents (Clay, 2004).[5]

[4] There are several potential environmental impacts at the cultivation stage. For example, the leaching of pesticides and fertilizers can contaminate local groundwater supplies and expose workers and growers to toxic chemicals (Clay, 2004). Poor crop management can also lead to soil degradation. Tobacco cultivation poses possible environmental health risks as well. For example, workers (especially child laborers) are highly susceptible to green tobacco sickness, a form of nicotine poisoning that occurs when it leaches through someone's skin and results in nausea, dizziness, vomiting, headaches, difficulty breathing, and abnormal heart rates (Clay, 2004; Pain et al., 2012).

[5] This data is based on production in the United States and the data source does not note whether this is for a pack of 10 or 20 cigarettes; nonetheless, the information is illustrative of the significant different in value obtained between different actors in the chain. Data is unavailable at the global level.

Curing

Following harvest, leaves are dried (cured) to permit stabilization and storage, graded into homogeneous lots, and then aged or fermented. The curing process varies—flue-cured and fire-cured tobacco requires an energy source for heat (usually wood or coal), while air-cured and sun-cured varieties do not (Commission of the European Communities, 2003; Negri & Porto, 2008). The skill of the farmer in curing is important for quality assurance (Negri & Porto, 2008). The use of wood and coal in the curing process increases the environmental impact of tobacco production, specifically in the forms of deforestation, biodiversity loss, and air pollution (Clay, 2004; Pain et al., 2012).

After curing, the tobacco is prepared into strips (for some varieties), sorted, and packaged into homogeneous bales for export and delivery to the manufacturers that transform them into cigarettes, cigars, etc. (Alliance One International, 2011). Some of the tobacco refuse (the by-product from the stemming, curing, and stripping process) is also exported.

Stemming and Stripping of Tobacco (Primary Processing)

This stage entails the stemming and stripping of tobacco leaves and ensures that moisture content is controlled to prevent deterioration in storage. Unprocessed (but cured) tobacco is a semi-perishable commodity and thus primary processing must take place relatively quickly. Processing facilities are generally located in producing countries (Alliance One International, 2011). Processing is usually carried out by leaf merchants and audited by buyers (Universal Corporation, 2012; Alliance One International, 2011). This segment of the value chain is highly consolidated with two global leaf companies, Alliance One International and Universal Corporation, accounting for large market shares.[6]

During this stage, tobacco is first reclassified according to grade, and then blended to meet client quality specifications. Next, the tobacco is threshed to remove the stem from the lamina and sieved to remove waste. The tobacco is then re-dried to extend the storage shelf life, although most tobacco is typically used within two to three years (Universal Corporation, 2012). Stored tobacco is packaged in bales, cases or cartons for shipment. The leaf merchants typically hold the inventory until the buyers (tobacco MNCs) specify shipping dates; therefore, leaf merchants often bear the inventory risk. The product is then shipped to the manufacturing destination, where the final tobacco products are made.

[6] Due to a lack of transparency and the dominant role played by these two publicly traded firms, it is difficult to determine their exact market share. Nonetheless, in their 2012 Form 10-K submission to the Securities and Exchange Commission in the United States, Universal Corporation states that they control approximately 20-30% of Brazil's tobacco crop and as much as 45% of Africa's tobacco production (Universal Corporation, 2012). Alliance One International claims in its 2011 Annual Report to shareholders to have a similar market share to Universal Corporation (Alliance One International, 2011).

Manufacturing (Secondary Processing)

The second stage of processing involves transforming the raw tobacco into cigarettes, cigars, cigarillos, chewing tobacco, and other final tobacco products. Given the importance of quality to branding, tobacco companies tend to manufacture internally. The largest firm, Phillip Morris International (PMI), owns and operates 59 manufacturing plants globally, while British American Tobacco (BAT) has 45 plants, Japan Tobacco International (JTI) 31 plants and Imperial Tobacco 51 plants (see company annual reports for 2012). In contrast to the production stage of the value chain, cigarette manufacturing is highly automated (PMI machines produce 20,000 cigarettes per minute), involving the rolling and cutting of rods into individual cigarettes, the insertion of filters, and importantly, packaging into individual packs of 10-20 cigarettes and then into cartons of 10 packs each. Cigar manufacturing includes both machine- and hand-made manufacturing, although machine-made cigars dominate the market, and cigars in general make up a much smaller share of the overall market than cigarettes.

Marketing and Distribution – Final Product to Consumers

The large transnational tobacco companies also coordinate the branding and marketing of final products. Estimates suggest that the marketing and distribution stage of the chain accounts for as much as 50% of the product value (Euromonitor International, 2012). The cigarette segment is divided into premium, economy and low-value brands, which offer different price-points based on consumer willingness to pay. Leading international brands in the premium segment include Marlboro (Altria and PMI), Dunhill and Kent (BAT), and Camel and Winston (JTI) (Euromonitor International, 2012).

Box 1. Services Associated with the Tobacco Global Value Chain

The tobacco GVC requires a wide array of services at each stage from production to distribution. The key services are summarized below and classified by production stage. The actors that typically provide such services are listed in parentheses, although this may vary by country and context and should be interpreted with care, particularly with respect to drawing any conclusions with regard to the impact of changing dynamics in the chain on employment. A more applied study in a particular country or region would be required to reliably assess the net employment impacts of reduced tobacco production and diversification, given the variation of production models, institutional frameworks, and service provision practices in the tobacco GVC.

Inputs

- *Seed provision* – Ensuring farmers have an adequate supply of seeds (tobacco companies, leaf merchants, large producers)
- *Agrochemical production and blending* – Supply of fertilizers, herbicides, and pesticides for use on tobacco crops (agrochemical supply companies)
- *Banking and finance capital* – Capital for tobacco producers to acquire seeds, agrochemicals, and other inputs (tobacco companies, leaf merchants, banks, governments)
- *Research and development* – Develop new seed varieties (e.g., drought resistant, pest resistant), machinery and production processes (tobacco companies, public research organizations, biotechnology firms)

Cultivation

- *Agricultural extension* – Weekly/biweekly/monthly visits from agronomists to producers focused on education & training in the production of tobacco (tobacco companies, leaf merchants, industry associations, producer collectives, governments)
- *Spraying* – Spraying of agrochemicals on tobacco crops during cultivation (producers, third-party firms for smallholder production)
- *Hail insurance* – Protects growers from unexpected events, such as hail and wind (insurance companies, tobacco companies, leaf merchants)
- *Farm equipment and infrastructure maintenance* – Maintaining irrigation systems and other farm equipment used in the cultivation and reaping of tobacco (local technicians and mechanics, producers)
- *Market information provision* – Provide infrastructure and venues for farmers to exchange and obtain market information (mobile telecommunication providers, traders, governments, industry associations, producer collectives)

Curing

- *Transportation* – Transport from fields to curing locations and warehouses (producers, affiliates of MNCs, leaf merchants)
- *Firewood or coal provision* – Harvesting, mining, processing, and distribution of fuel for curing purposes (producers—firewood, third-party suppliers)
- *Equipment and infrastructure maintenance* – Maintaining equipment and infrastructure used in the curing of tobacco, such as flues, boilers and sheds (construction firms, producers, mechanics)
- *Warehousing* – Storage for cured, but unprocessed, tobacco (leaf merchants, producers, agents)

Stemming and Stripping

- *Auction* – Services for linking farmers with leaf merchants and tobacco companies that are not using a direct, contract-based procurement system (parastatal institutions, private auction firms)
- *Transportation* – Transport to and from stemming and stripping locations and warehouses to export destinations (leaf merchants, producers, agents, tobacco MNCs, transportation firms)
- *Warehousing* – Storage for primary processed tobacco (leaf merchants, agents, producers, tobacco MNCs)
- *Import/export* – Processing customs, duties, taxes, etc. (governments, private contractors)

Manufacturing

- *Transportation* – Transport from import locations to manufacturing facilities, and from manufacturing facilities to export destinations or retail outlets (logistics companies, tobacco MNCs, leaf merchants, agents)
- *Warehousing* – Storage for finished tobacco products (tobacco MNCs)
- *Paper provision* – Rolling paper for cigarette manufacturing (tobacco MNCs, paper suppliers)
- *Manufacturing equipment provision* – Supply equipment for manufacturing of cigarettes and other tobacco products (equipment suppliers)
- *Manufacturing equipment maintenance* – Maintain cigarette manufacturing equipment and production lines (tobacco MNCs, mechanics)
- *Financial consulting (for leaf merchants and global buyers)* – Strategic advice for maintaining and increasing shareholder value (management consulting firms, tobacco MNCs)
- *Financial and banking (for leaf merchants and global buyers)* – Asset management, investment, and accounting for global tobacco companies and leaf merchants (hedge funds, investment banks, tobacco MNCs)

- *Legal* – Legal advice pertaining to tobacco production and research and development (law firms, tobacco MNCs)

Marketing and Distribution

- *Transportation* – Transport to distribution warehouses and retail outlets (logistics firms, tobacco MNCs)
- *Advertising* – Marketing and product promotion within the constraints of domestic tobacco marketing restrictions in particular countries (advertising agencies, tobacco MNCs)
- *Logistics* – Logistical management of product warehousing and distribution to retail outlets (logistics firms, tobacco MNCs)

Overall, the input-output structure of tobacco has multiple stages of production and processing, which typically occur in locations that are geographically dispersed. One of the reasons for the geographic separation of stages is variation in the production requirements of each stage: some involve highly labor- and land-intensive (cultivation), while others are capital-intensive, quality-sensitive, and mechanized (cigarette manufacturing). Within this structure, small producers are situated in a low-value segment of the tobacco GVC that is highly competitive, while MNCs typically operate in the highest value segments of the chain (marketing and distribution). This can be especially problematic in countries, such as the case studies of Malawi and Zimbabwe indicate, where there are limited alternatives, because it makes small producers more vulnerable to declining prices, currency fluctuations, and other externalities (Jacobs, et al., 2000).

3. Demand and Supply Trends in the Tobacco GVC

This geographic distribution of different stages of the tobacco chain has shifted over the past decade. The rise of tobacco control policies is only one of several changes underway in the tobacco GVC that are shaping international patterns of supply and demand. This section provides an overview of trends, which provides the necessary background to explore how changes in the tobacco GVC are affecting small producers in tobacco-dependent countries. Three overarching trends can be identified: demand for tobacco products is increasing – not decreasing; end markets are shifting to Asia; and supply is shifting to lower-cost destinations in low- and middle-income countries.

3.1. Global Demand

Global demand for cigarettes has been steadily growing, both in value and volume (Table 1). This growth, however, is largely driven by only one region: Asia-Pacific. From 2001 to 2011, the demand for cigarettes grew 59% in Vietnam, 41% in China, 34% in Indonesia, 32% in the Philippines, and 15% in India (Euromonitor, 2013a). With a much bigger population, China's growth was largest in absolute terms, with an increase of 739 billion sticks from 2000 to 2011, followed by the Russian Federation with an increase of 55 billion sticks (Euromonitor, 2013a). China is also the world's largest consumer of cigarettes (see Figure 2). Several pull factors have contributed to the shift toward Asia, including a growing consumer class in China and other Asian countries, evolving cultural norms about the desirability of smoking (particularly as a

symbol of modern masculinity), and growing presence and marketing of global tobacco brands in Asia due to trade liberalization (Arnez, 2009; Euromonitor International, 2012; Honjo & Kawachi, 2000).

The tremendous growth in China overpowers many of the trends going on elsewhere in the world and is, indeed, beginning to shape global industry dynamics. Although China has traditionally produced much of the tobacco that it consumed, increasingly it is importing tobacco to satisfy the growing demand, driving up demand for raw materials. Rising incomes and urbanization have also contributed to the growing desire for premium cigarettes in China, which, until recently, has primarily been a market for mid- and low-value cigarettes (Euromonitor International, 2012).

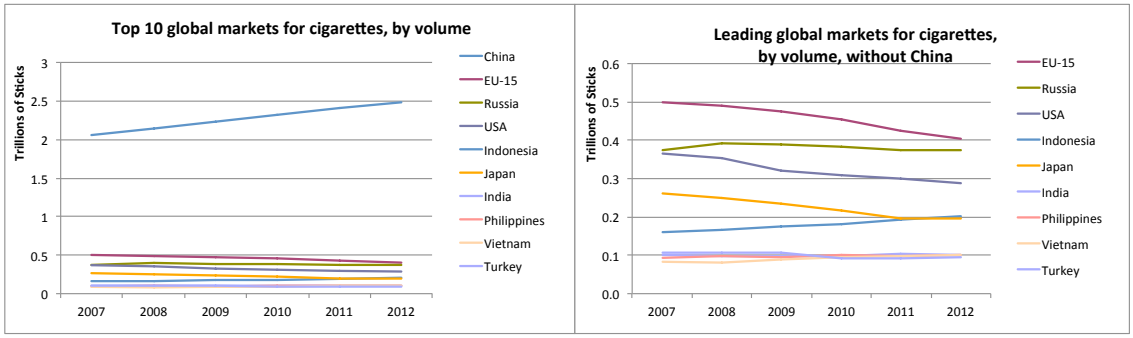
Table 1. Regional Share of Global Cigarette Market, by Volume and Value

	Market Share, by Volume (%)		Market Share, by Value (%)	
	2007	**2012**	**2007**	**2012**
Asia Pacific	55	61	32	42
Australasia	0	0	2	2
Eastern Europe	13	12	9	9
Latin America	5	4	4	4
MENA	7	7	3	4
North America	7	6	17	15
Western Europe	12	10	33	25

Source: Euromonitor, 2013a.

As demand has expanded in Asia, it has contracted in more traditional cigarette markets, especially in the US, EU, and Japan. Between 2001 and 2011, demand decreased by 28% in the US, 29% in Japan, and 41% in Germany (Euromonitor, 2013a). Various push factors have contributed to this decline, driven to a large extent by public health concerns regarding the negative impact of smoking, but also by economic factors; these include more stringent tobacco regulations as a result of FCTC ratification and implementation, taxation and higher prices (also related to tobacco control), and lower consumer spending power during the economic recession (Chaloupka & Nair, 2000; Euromonitor International, 2012). For example, the US passed the Children's Health Insurance Program Reauthorization Act of 2009, which sharply increased the federal excise tax on cigarettes from US $0.39 to US $1.01 per pack of 20 cigarettes (EuroMonitor, 2013b). This contributed to a major drop in demand in 2009. Despite this overall decline, markets in the US, EU, and Japan still maintain a niche for premium brands, while markets elsewhere are typically dominated by low-value brands. Thus, while Asia Pacific is the clear market leader from a volume perspective, the EU is still an important market for higher value cigarettes.

Figure 2. Leading Global Markets for Cigarettes

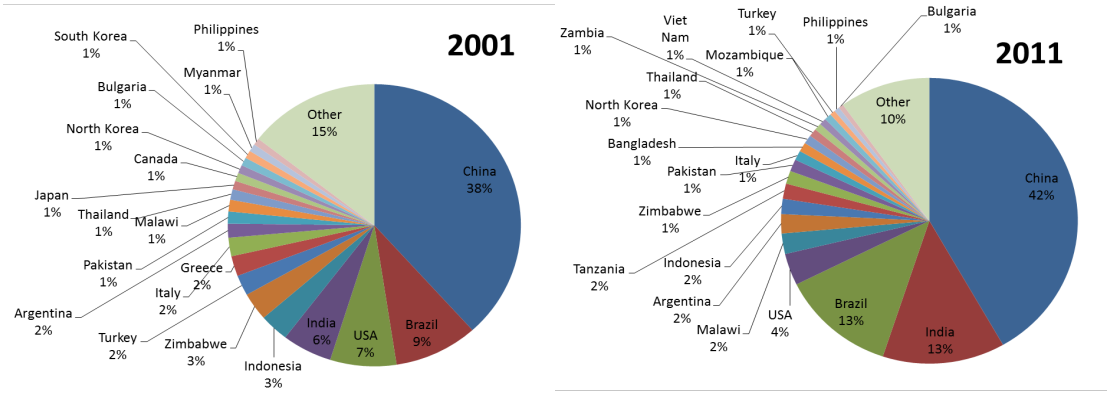


Source: Euromonitor, 2013a.
Note: EU-15 does not include Luxembourg due to data unavailability.

3.2. Global Supply

Alongside the demand shifts, the supply networks of tobacco have also changed significantly (Figure 3). Overall, the geography of tobacco production has been moving towards emerging economies and lower-income countries over the past decade. Among the top producers, tobacco production has rapidly declined in the US and expanded in countries such as Brazil, India, and Malawi. Tobacco production in the US declined 39% from 2001 to 2011, and there were significant declines in Italy (-37%) and Indonesia (-35%) over the same period (FAOSTAT, 2013). Concurrently, tobacco production has increased dramatically in India (197%), Malawi (112%), Brazil (67%), Argentina (68%), and China (34%). Although China does not have the highest percent change in tobacco production, it is the largest producer in the world, and it had the largest net increase in quantity produced—from 2.4 million tonnes in 2001 to 3.2 million tonnes in 2011. India's increase in quantity terms was just as significant as China's, more than doubling output from 340,000 tonnes in 2001 to 1 million tonnes in 2011 (FAOSTAT, 2013).

Figure 3. Shifts in Tobacco Production Over Time (in Tonnes)



Source: FAOSTAT, 2013.

Table 1 shows how dramatically the trade patterns of tobacco are shifting. In 2001, the US was the leading exporter, but has subsequently lost a large share of its market to Brazil. Brazil's export values more than tripled over the last ten years, while India's grew six fold and China's exports more than tripled as well (UN Comtrade, 2013). Zimbabwe and Malawi decreased in rank, but were stable and grew in terms of export values, respectively. These changes have required corresponding adjustments in the capacity of primary processing facilities in these countries.

Table 1. Top Ten Global Exporters of Tobacco, 2001 and 2011 (US $ Millions)

	2001				2011		
	Country	**Value (US $ mil.)**	**Share**		**Country**	**Value (US $ mil.)**	**Share**
1	US	1,567	31.3%	1	Brazil	3,018	30.8%
2	Brazil	944	18.8%	2	US	1,021	10.4%
3	Zimbabwe	511	10.2%	3	India	639	6.5%
4	Malawi	273	5.4%	4	China	615	6.3%
5	Italy	179	3.6%	5	Zimbabwe	530	5.4%
6	China	169	3.4%	6	Malawi	490	5.0%
7	Argentina	142	2.8%	7	Germany	395	4.0%
8	Germany	110	2.2%	8	Argentina	378	3.9%
9	Netherlands	104	2.1%	9	Italy	291	3.0%
10	India	103	2.1%	10	Tanzania	277	2.8%

Source: UN Comtrade, 2013, Raw tobacco: HS code 240120, world aggregate import values.

The location of final product manufacturing, however, has not changed as much as it has for stemmed and stripped tobacco. European countries, including Germany and the Netherlands, have long played an important role in the manufacturing and/or re-export of finished tobacco products. As a result, the tobacco industry has considerable political leverage in these countries (Grüning, et al., 2012), allowing MNCs to retain most of their existing manufacturing bases, while directing a growing percentage of production towards the export market. From 2001 to 2011, the Netherlands, Germany, and Switzerland increased their cigarette export values by 80%, 140%, and 685%,[7] respectively (UN Comtrade, 2013). In addition to these European manufacturing strongholds, Poland has risen to become the third largest exporter of cigarettes even though it was not in the top ten in 2001.

These export data suggest that, while regional demand for cigarettes is declining, the role of EU tobacco manufacturers is becoming stronger in the tobacco GVC overall. In contrast, US cigarette exports declined by 66% from 2001 to 2011 (UN Comtrade, 2013) and the United Kingdom (UK), Japan, and United Arab Emirates have fallen off the top 10 list of cigarette exporters completely. Thus, tobacco MNCs appear to be consolidating production in the EU

[7] These figures have been adjusted to 2011 dollars based on the Bureau of Labor Statistics Consumer Price Index calculator, http://data.bls.gov/cgi-bin/cpicalc.pl (accessed November 23, 2013).

overall and expanding in Eastern Europe, while decreasing production elsewhere. Future research could investigate why companies are focusing their manufacturing operations in the EU.

Table 2. Top Ten Global Exporters of Cigarettes, 2001 and 2011 (US $ Millions)

	2001				2011		
	Country	**Value (US $ mil.)**	**Share**		**Country**	**Value (US $ mil.)**	**Share**
1	US	3,175	29%	1	Netherlands	5,338	23%
2	Netherlands	2,332	21%	2	Germany	4,899	21%
3	Germany	1,609	14%	3	Poland	2,299	10%
4	UK	1,007	9%	4	Switzerland	1,773	8%
5	United Arab Emirates	460	4%	5	US	1,093	5%
6	Belgium	305	3%	6	Czech Rep.	823	4%
7	Japan	243	2%	7	Romania	751	3%
8	France	197	2%	8	Portugal	485	2%
9	Switzerland	178	2%	9	Lithuania	420	2%
10	China	155	1%	10	Russian Federation	370	2%

Source: UN Comtrade, 2013, Cigarettes, HS code 240220, world aggregate import values.

However, with the increase in tobacco control policies, especially taxes, which has created large price differentials between countries in cigarette prices, illicit trade in tobacco products is growing, and trade statistics should be interpreted with this in mind. Illicit tobacco products are those that are bought and sold without paying duty, and thus are not factored in to import and export statistics; they are estimated to account for approximately 10% of global tobacco consumption (Eriksen, et al., 2012; Euromonitor International, 2012; Marketline, 2012). The prevalence of illicit trade varies by market and region, although overall, excluding China, the general consensus is that it increased at an estimated rate of 5% in 2011 (Euromonitor International, 2012). Latin America, the Middle East and Africa have the highest prevalence of illicit tobacco trade (Euromonitor International, 2012).

4. Lead Firms, Governance, and Institutional Change in the Tobacco GVC

This section provides an overview of the firm structure at the buying levels of the tobacco GVC and examines two important trends related to governance: growing consolidation, and the expansion of outgrower contracts as the dominant institutional arrangement for purchasing tobacco. These governance changes have the potential to affect small producers in significant ways and thus they should inform diversification policies. Overall, the tobacco MNCs and global leaf merchants are few in number, large, and powerful, and they have operations in all major tobacco producing regions.[8]

[8] Based on a review of 2012 annual company reports for the leading tobacco manufacturers and leaf merchants.

4.1. Firm Structure

As noted earlier, the tobacco MNCs generally perform the manufacturing (secondary processing), marketing, branding, and coordination functions of the chain. This is a highly consolidated segment and the top five firms account for approximately 80% of the global market, by volume (Euromonitor, 2013a). Table 3 summarizes key characteristics of the top eight tobacco companies. In addition to expanding into new markets in Asia, all of the leading firms are exploring diversification into different product lines, such as e-cigarettes and smokeless tobacco (Standard & Poor's, 2013), particularly to maintain sales in traditional markets where cigarette sales have been declining in recent years.

Table 3. Leading Global Tobacco Companies

	Firm	Headquarters	Employees FY 2011	Revenue FY 2011 (US $ Billion)	Number of Cigarettes 2011 (billion)	Major Brands
1	CNTC[a]	China	510,000	122 (2010)	Est. 2,300 2009	Hongtashan
2	PMI	New York, US	87,000	31.1	915	Marlboro; L&M
3	BAT[b]	London, UK	87,800	23	705	Dunhill, Kent, Lucky Strike and Pall Mall
4	JTI	Tokyo, Japan	27,000	18.2	563	Camel, Winston, Silk Cuts, Benson & Hedges
5	Altria	New York, US	9,100	16.6	137	Marlboro, Parliament,Virginia Slims,
6	Imperial Tobacco	Bristol, UK	31,200	10.6	343	Davidoff, Gauloises Blondes, West and John Player Special
7	Reynolds American	Winston-Salem, US	5,700	8.5[a]	110	Camel, Pall Mall, Dunhill
8	Lorillard	Greensborro, US	2, 700	4.6	40	Newport, Kent

Source: Authors, based on Company Annual Reports, 2012.

Notes: [a]"Anti-Smoking Group Calls for Urgent Tobaco Controls," 2010; GOV.cn, 2012; Loo, 2012.

[b] In order to limit their exposure to litigation in the US market, global tobacco companies operate as separate legal entities. The BAT owned subsidiary in the US is Reynolds American, while PMI spun off from Phillip Morris in 2007, which was renamed Altria.

Leaf merchants act as intermediaries between the tobacco farmers and tobacco MNCs, conducting some portion of the primary processing activities, such as stemming, stripping, and grading. However, MNCs do not always use leaf merchants, and they often engage in direct sourcing. In general, leaf merchants are less powerful than the MNCs due to their position as intermediaries in lower-value segments of the chain. However, the two largest firms—Universal

Leaf and Alliance One—control a very significant share of the global market.[9] For example, they account for 62% of Imperial Tobacco's total tobacco purchases (Imperial Tobacco, 2006). Universal Corporation also claims to handle 20-30% of Brazilian tobacco and 35-45% of tobacco in Africa (Universal Corporation, 2012).

Table 4. Leading Global Leaf Merchants

	Revenue FY 2011 (US $ Billion)	Employees (Full and part time)	Key Locations	Key Clients
Universal Leaf (US)	2.6	26,000	Brazil, Malawi, Mozambique, Philippines, Tanzania, Zimbabwe, US	+10% PMI and Imperial; +3 customers with 5-10%
Alliance One International (US)	2.1	10,300	Brazil, Malawi, Tanzania, Turkey, Germany, Indonesia	+10% each BAT, PMI and JTI

Source: Universal Corporation, 2012; Alliance One International, 2011.

Ownership dynamics at the leaf procurement level can be complex. Several of the MNCs own leaf companies, either through wholly owned subsidiaries or joint ventures. For example, both PMI and CNTC have established joint ventures with Alliance One International to manage contract buyers and primary processing in Brazil (Alliance One International, 2011). In addition, JTI has acquired leaf merchants in Africa, Asia, and Latin America, and it established joint ventures with US-based leaf merchants (JTI, 2013).

4.2. Consolidation

Over the past decade, there has been a consistent trend of consolidation amongst both the leading tobacco MNCs and leaf merchants. This has largely taken place through mergers, acquisitions, and the establishment of joint ventures, particularly as global firms have sought to enter new markets and consolidate their positions in developing countries, especially those in Asia and Latin America. Between 2005 and 2012, PMI acquired leading firms in Australia, Canada, Colombia, Jordan, New Zealand and South Africa. It also acquired majority stakes in firms in Mexico and Pakistan, expanded joint venture operations in Vietnam and the Philippines (Vietnam Tobacco Corporation and PMFTC respectively), and a 40% stake in Indonesia's third largest tobacco company. Meanwhile, during that same period, BAT acquired firms in Colombia, Indonesia and Turkey, and JTI acquired leading British manufacturer Gallaher Group as well as Haggar Cigarette & Tobacco Factory in the Republics of Sudan and South Sudan (Aguinaga Bialous & Peeters, 2012). In the leaf merchant market, in 2005, a merger between the second and third largest leaf companies, Standard Commercial Cooperation and DIMON, led to the establishment of Alliance One International (Alliance One International, 2006).

There are several plausible explanations for growing consolidation. First, the regulatory environment has become increasingly complex. The global tobacco control movement, spearheaded by the WHO and culminating in the Framework Convention on Tobacco Control

[9] The exact share is unknown.

(FCTC), led to the implementation of various tobacco control policies to protect public health (Collin, et al., 2002). However, FCTC implementation has been uneven, which makes the regulatory landscape complicated—for example, vast differences in taxes on cigarettes exist from one country to another (Olanie, et al., 2012). Larger firms are generally better positioned to engage diversification strategies to manage these regulatory risks and also to use their political leverage in an attempt to influence policy in their favor (Grüning et al., 2012).

Second, because of the high costs of the tobacco epidemic from a public health standpoint, governments and other parties have aggressively litigated the tobacco industry and the industry responded offensively with its own litigation efforts against tobacco control efforts. MNCs have attempted to minimize their exposure to legal actions in many ways. For example, PMI reorganized its business operations, legally separating US operations from the rest of the company to protect its assets (Associated Press, 2007). Therefore, because tobacco is a legal product but also highly detrimental and costly to human health, tobacco firms require substantial resources and market power to manage increasingly high legal risks. This has contributed to consolidation.

Third, as the leaf merchant segment of the chain has become more concentrated, the tobacco MNCs have responded to the increase in the market power of these firms by vertically integrating and engaging in more direct leaf buying and processing activities. Leaf merchants carry high amounts of capital-at-risk, given that they often outlay capital for the growers and then hold inventory (up to three years). As the tobacco MNCs vertically integrate, there appears to be some squeezing out of the smaller leaf merchants that cannot afford these risks. This cycle of consolidation between and among MNCs and leaf merchants becomes self-perpetuating, as remaining firms increase their market shares and market power.

A host of additional factors influencing consolidation in the tobacco industry can be yet further distilled. For example, evidence from Malawi and Zimbabwe, in addition to others, demonstrates that large MNCs are able to leverage their comparative purchasing power to drive down market prices on raw tobacco to their advantage, incentivizing acquisitions to capitalize on lucrative collusive behavior (Clay, 2004; Geist, et al., 2009; Hanssen, 2010; UNCTAD, 2011). Recent studies insist that the number of acquisitions in the global tobacco industry is a by-product of operating in a mature industry, whereby the use of excess cash flows for acquisitions as a growth strategy is more efficient than other pro-growth areas like R&D and manufacturing expansion (Standard & Poor's, 2013). Furthermore, liberalization policies around the world have created substantial opportunities for MNCs to gain market access (and/or minimize competition) through acquisition as former parastatals are privatized or partially liberalized, such as the case of BAT's acquisition of Tekel and PMI's joint venture with China's CNTC (Aguinaga Bialous & Peeters, 2012) (see section 5.1for further discussion on liberalization).

This ongoing trend of consolidation and market concentration makes control of the tobacco GVC oligopolistic with highly uneven power dynamics between different segments. Because the MNCs are so large and the regulatory environment is complex, entry into the manufacturing stages of the value chain is very difficult. Even leading domestically owned tobacco companies in several countries are struggling to stay competitive with the MNCs (Arnez, 2009). This has a tendency to

negatively affect small producers, because it weakens their bargaining position as actors farther down the value chain and can lead to abuses of market power. For example, leaf merchants allegedly colluded with each other to keep the prices low in Malawi and the growers did not have the bargaining power to negotiate higher prices (Otañez, et al., 2007). In another case, CNTC offered growers higher prices in Zimbabwe; however, they charged large mark-ups on inputs and high interest rates on credit, which reduced the overall returns from the crop (The Standard, 2013).[10]

4.3. Expansion of Outgrower Contracting Arrangements

The tobacco MNCs have increased vertical integration by setting up direct sourcing arrangements with tobacco farmer collectives through outgrower contracts. Outgrower contracting arrangements are established such that the buyer provides inputs, credit, and technical assistance to the producer or producer group, and commits to purchasing the crop upon harvesting. These outgrower arrangements for purchasing tobacco have replaced auctions as the dominant institutional framework for tobacco purchasing in recent years (Hanssen, 2010). For example, both JTI and PMI have increased their direct sourcing relationships in Malawi and Brazil, respectively, since 2009 (Universal Corporation, 2012; Alliance One International, 2011).

Growth in contract arrangements can be attributed to a number of different factors. From the perspective of tobacco MNCs, contract farming arrangements are largely driven by the desire for greater control of their supply networks—from the fields to the consumer—and in forecasting expected costs/returns (Oya, 2012). Additionally, contracting is used increasingly as a method for ensuring quality control at the supply end of the chain -- from both the quality of inputs used by producers, to ultimately the quality of tobacco purchased by buyers (Hanssen, 2010). Similarly, PMI and BAT claim that contract farming helps them better control the occurance of labor abuses within their value chains, such as child labor (BAT, 2012; PMI, 2012). From the institutional perspective, contract farming can be leveraged as a strategey to augment inefficient or ineffective access to credit by farmers from formal credit agencies, as the case of Zimbabwe shows (Mukwereza, 2013). Additionally, national governments use contract farming in tobacco as a strategy to diversify away from traditional forms of auction-based sales and/or to liberalize previously nationalized control of tobacco sales, as current reforms in Malawi demonstrate (Prowse & Moyer-Lee, 2013).

The impact of increased outgrower contracting on small producers is complicated to assess. In the short run, they expand access to markets and provide opportunities for small producers to enhance their crop management skills through services such as technical assistance. In the long run, however, small producers can be at risk of falling into debt bondage cycles when unexpected events occur (Geist, et al., 2009; Vargas & Bonato, 2007). In addition, there have been reports of leaf merchants extending more credit to small producers upfront than they pay for the crop at the

[10]Alliance One and Universal Leaf both note in their annual reports that they charge both interest and mark ups on their inputs that they finance for producers (Universal Corporation, 2012; Alliance One International, 2011).

end of the contract (Clay, 2004). Several tobacco companies have also been sued on anticompetitive grounds, alleging that they used contracting arrangements to collude and rig the prices paid to farmers (Hanssen, 2010).[11] As a result, outgrower arrangements may seem appealing for small producers at the outset, but they can be disappointed with the returns and become increasingly dependent on tobacco through the debt bondage cycles (Clay, 2004; Geist, et al., 2009; Vargas & Bonato, 2007).

The shift in sourcing patterns to lower income countries, increasing consolidation, and the expansion of outgrower contracts indicate that governance dynamics in the tobacco GVC are becoming more uneven and small producers are losing ground in terms of their bargaining power. Furthermore, the complex nature of outgrower contracts tends to draw small producers deeper into tobacco production, while increasing their exposure to debt risks. More research is needed to assess the long-term sustainability of outgrower contracts in tobacco-dependent countries for small producers, specifically whether they are impoverishing small producers and also making it harder for them to switch out of tobacco, or whether the gains from improved access to inputs, credit and training can be translated into improved production of other crops.

5. Policy Debates

This section examines the question of how tobacco trade policy effects trade patterns in the industry—with the understanding that if trade policy changes are clearly a major driver of trade patterns, this could have a significant impact on small producers in tobacco-dependent countries. Trade liberalization and tobacco control, the two major contending policy trends over the last two decades, are reviewed. It is generally assumed in tobacco trade policy debates that liberalization will lead to increased tobacco trade and economic development, while tobacco control will reduce these. However, the evidence suggests that the actual effects of trade policy trends on trade patterns are more complex and their impact vis-à-vis other changing dynamics in the chain are questionable. In practice, trade policy effects are mediated by several variables and do not clearly lead to particular outcomes. For example, the overall lack of harmonization of tobacco control policies complicates the analysis because tobacco control, while focused on improving public health, is a *de facto* barrier to trade and it also influences demand by raising prices and reducing access (Olanie et al., 2012). These questions are discussed in this section, as well as examined in the context of the three country case studies.

5.1. Liberalization

Like many industries, tobacco trade was affected by the general pattern of trade liberalization that was dominant in the late 1970s and 1980s. Specific policy reforms, such a reducing or eliminating tariffs and duties, and growing international pressures to privatize state-owned industries, began to erode the existing monopolistic industry structures in many countries,

[11] *DeLoach v. Philip Morris Co., Inc.,* 206 F.R.D. 551 (M.D.N.C. 2002). The case was settled out of court in 2003.

particularly in Asia. Two key pieces of national and international legislation shaped the emerging trade patterns. First, in 1974, Section 301 of the US Trade Act gave the US President authority to investigate discriminatory trade practices in other countries that limit access to their markets (Chaloupka & Nair, 2000). The Act was amended in 1984 and 1988, strengthening Section 301 and requiring the US Trade Representative to identify countries that limited access of US firms to their markets. As a result, Japan, Taiwan, and South Korea were pressured to set up bilateral trade agreements with the US that opened their markets to US cigarette firms (Chaloupka & Nair, 2000). This generally occurred in the 1980s. Second, the 1994 Uruguay round of the General Agreement on Tariffs and Trade, governed by the World Trade Organization (WTO), expanded trade liberalization policies to services and other sectors, and it also launched a comprehensive reform of agricultural-related trade policies (including tobacco). This liberalized tobacco trade, including reducing tariffs on cigarettes by 36% in the EU (Chaloupka & Nair, 2000). However, it does have an exception, Article XX, which allows for countries to contest liberalization in cases where it was necessary to protect public health.

The combined effect of these and other trade liberalization measures was a dramatic increase in competition and cigarette advertising in countries that had opened their markets, and high growth in the market shares of major global tobacco companies (Chaloupka & Nair, 2000). In Japan, for example, total cigarette advertising by US companies doubled from 1987 to 1990, and per capita cigarette consumption was estimated to be 10% higher as a result of the bilateral agreements between Japan and South Korea, Taiwan, and Thailand (Chaloupka & Laixuthai, 1996; Chaloupka & Nair, 2000). In addition, raw tobacco exports rose at a rate of 12.5% globally from 1994 to 1997, and cigarette exports increased 42% from 1993 to 1996 (Chaloupka & Nair, 2000).

5.2. Tobacco Control

A second wave of trade pattern shifts came after the major trade liberalization wave, this time driven by the tobacco control movement, spearheaded by the WHO. This movement was sparked by mounting evidence of the negative health effects and other impacts of tobacco, such as the findings that smoking causes an estimated 400,000 deaths annually in the US and costs the US government roughly US $193 billion (Government Accountability Office, 2011). The policy changes associated with tobacco control began to impact the geography and governance patterns of the tobacco GVC, as well as the demand for tobacco products. The key tobacco control policy changes are summarized in Box 2.

Box 2. Tobacco Control Landmarks

1998 – Master Settlement Agreement in the US – 46 states and the tobacco industry agree to a billion dollar settlement to reimburse states for tobacco-related health care costs (American Lung Association, 2013). This was a major landmark in tobacco control, and was the beginning of a long series of lawsuits against the tobacco industry.

1999 – US Justice Department Fraud Allegations – The Justice Department sues the tobacco industry for fraud and deceit under the Racketeer Influenced and Corrupt Organizations Act (American Lung Association, 2013). In 2006, the tobacco companies were held liable for fraudulently deceiving the public about the negative health effects of smoking, and the ruling was upheld on appeal (Public Health Law

Center, 2010).

2003 – EU Directive on Tobacco Advertising – This directive banned tobacco advertising in print media, on the radio, and over the Internet. It also banned cross-border sponsorship of events or activities by the tobacco industry (European Commission, 2006).

2004 – Framework Convention on Tobacco Control– Signed in 2004, the FCTC promotes tobacco control measures for reducing demand and supply of tobacco, as well as protecting the environment. Although it offers clear guidance to member countries in terms of establishing a baseline standard for tobacco control efforts, some have argued that it lacks enforcement mechanisms, especially for counter-acting trade liberalization processes (Khor, 1999). The EU, Japan, and many other countries (but not the US) ratified and approved FCTC in 2004 or shortly thereafter. As of August, 2013, 177 countries were parties to the FCTC treaty (Campaign for Tobacco-Free Kids, 2013).

2006 – US Surgeon General Report – The Surgeon General's report, *The Health Consequences of Involuntary Exposure to Tobacco Smoke*, asserts that secondhand smoke is unequivocally harmful to human health (American Lung Association, 2013). This led to more widespread adoption of tobacco control policies, such as restricting smoking in public places in several US states.

The increase in tobacco control policies, especially in the traditional consumer markets of the US and EU, has likely played a role in the shifting geography of consumer demand away from those markets and towards Asia. As tobacco MNCs pursue these new markets, there has been renewed debate between promoting free trade (which would enable the MNCs to access new markets) and protecting public health (Bloomberg, 2013; World Health Organization, 2012). Many argue that liberalization undermines tobacco control efforts because it tends to increase tobacco consumption and makes it harder for countries to protect public health without facing legal challenges for violating trade laws (Bettcher, et al., 2001; Shaffer, et al., 2005; World Health Organization, 2012). In other words, unless there is a process for identifying tobacco as a special case, such as Article XX of the GATT, the WTO would interpret tobacco control as an illegitimate barrier to trade when legal challenges are filed.

The negotiations over the Trans-Pacific Partnership trade agreement provide a recent example of these debates. Initial proposals included a "safe harbor" provision that excluded tobacco from free trade agreements in the signatory countries (Campaign for Tobacc-Free Kids, 2013). In August, 2013, however, the Office of the United States Trade Representative decided to abandon the safe harbor provision out of a concern that it would become a precedent for excluding agricultural products, replacing it with a specific clause requiring government health authorities to discuss any challenge to tobacco regulations before it can be legally challenged (Bloomberg, 2013; Office of the United States Trade Representative, 2013). This means that, if the negotiations proceed, individual countries will have to go through more steps to legislate and enforce tobacco control measures, and it will be harder for the governments to combat legal challenges from the tobacco industry in the WTO system.

5.3. Effects of Trade Policy Changes on Trade Patterns in Tobacco

In general, the question of how trade liberalization has shaped global trade in and market dynamics of tobacco is understudied, and there is a limited body of research on it (World Health Organization, 2012). In a review of the literature since 2001, the World Health Organization (2012) found a handful of studies on the topic, which were based in Taiwan and the former Soviet Union, and concluded that liberalization and investment increased per capita cigarette consumption in those countries. One of the challenges in assessing the drivers of trade and consumption patterns is the overall complexity of the trading landscape (Olanie et al., 2012). In addition, as tobacco control has increased, illicit trade in tobacco has expanded, which complicates efforts to trace demand and supply (Eriksen, et al., 2012; Euromonitor International, 2012; Marketline, 2012).

Olanie et al. (2012) found that tobacco trade outcomes varied depending on the type of regulation (e.g., marketing bans versus spatial restrictions on smoking), whether a country is primarily an importer or exporter, the extent of regulation (whether partial, full, enforced or not, etc.), trade costs (cultural, institutional, geological characteristics of a country), domestic demand, levels of regulation in other countries, and foreign demand and trends (such as smoking flavored cigarettes in certain countries). Overall, they found that harmonizing marketing regulations and implementing more age and spatial restrictions were most promising for reducing tobacco imports. On the supply side, Jacobs, et al. (2000) suggest that tobacco control in countries that export far more tobacco than they consume (such as Malawi and Zimbabwe) is more likely to have a detrimental effect on the rural economies and farmer livelihoods than it would have in other kinds of countries (e.g., net importing countries or countries that produce and consume roughly the same amount of tobacco).

In addition, tobacco is a highly politicized industry, especially in the countries that are very reliant on it (such as Malawi) and in countries where the industry has a long history, such as the US, Germany, Japan, and the Netherlands. Lobbying by the industry and tobacco control advocates shapes how tobacco control policies are legislated, implemented, and enforced (Gruning et al., 2012). Thus, broader geopolitical governance structures influence tobacco control itself as a variable in significant ways and contributes to the uneven landscape of regulation.

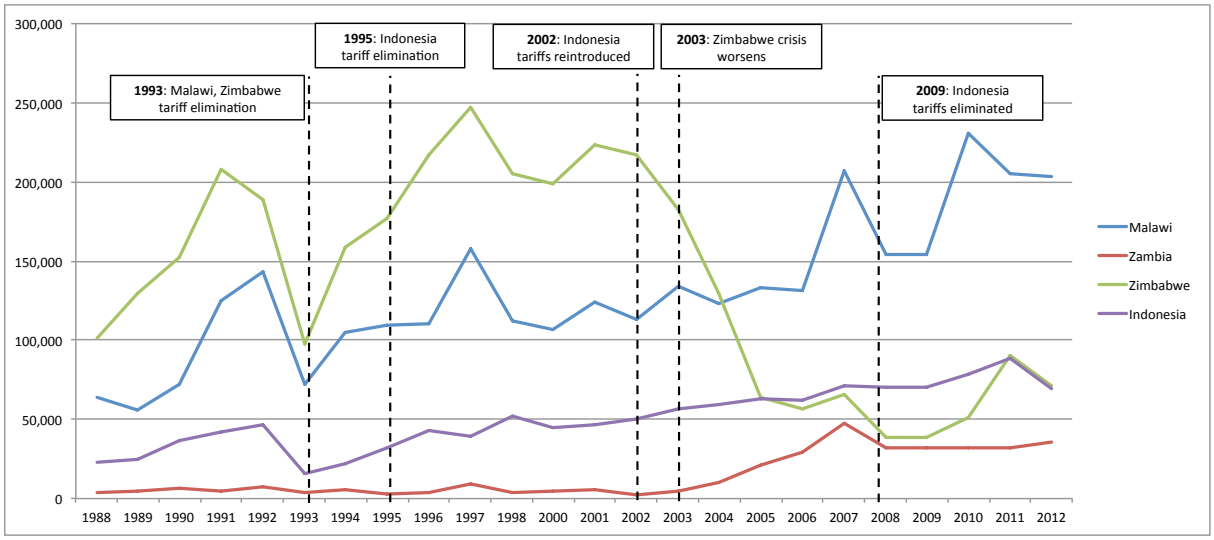
5.4. Impact of EU Tariff Changes in Case Study Countries

For the three countries discussed in the following section (Malawi, Zimbabwe and Indonesia), the effects of the EU's removal of tariffs on raw tobacco imports was unclear (Figure 4). According to the UNCTAD Trains database accessed through the World Integrated Trade Solution (WITS) of the World Bank and UNCTAD, the EU tariffs on raw tobacco imports from Malawi and Zimbabwe decreased from 18.5% in 1992 to zero in 1993 (and remained at zero since then). As shown in Figure 4, this appears to have resulted in delayed imports in the EU, with a rapid drop in 1992 (as tariff removal was pending), and then a surge back to pre-existing levels after tariff removal. Aside from this dip in imports, EU tobacco imports had been growing prior to tariff removal, and they continued to grow after tariff removal. Therefore, the hypothesis that tariff elimination significantly affects the rate of change of imports is not clearly supported by evidence

from Malawi and Zimbabwe. The worsening political and economic crisis in Zimbabwe in the mid-2000s, on the other hand, appears to have had a much stronger influence on EU imports of raw tobacco than tariff elimination. Figure 4 indicates that production shifted out of Zimbabwe and into Zambia, in particular, during this time. Therefore, it is likely that the displacement of production out of Zimbabwe and the overall pattern of increased demand worldwide had a greater effect on EU imports from Malawi than tariff removal per se.

In Indonesia, average EU import tariffs on tobacco decreased from 18.5% to zero in 1995, and then they were reintroduced at an average rate between 4.87% and 5.98% from 2002 to 2009 (WITS, 2013). EU imports of tobacco from Indonesia, however, were not clearly affected by the changes in tariffs. While there were some minor fluctuations, the trend of positive growth in imports generally remained unchanged (WITS, 2013).[12]

Figure 4. Effects of Trade Liberalization on EU Tobacco Import Values



Source: WITS, 2013.

Given the ambiguity of the EU tobacco import trends during the times of tariff removal, and in the absence of a more comprehensive quantitative analysis,[13] there is little evidence to support the hypothesis that tariff removal is a major driver of trade patterns between the EU and these countries. This is not to suggest that trade policy is irrelevant, but rather that understanding the impacts of trade policy requires more than a simple analysis of the correlation between tariffs and imports.

[12] Exports decreased from 1992-1993, 2011-2012, and some other years in which tariffs had not changed.

[13] Such analysis may not be feasible for the early 1990s due to a lack of data for that time period for many of the possible causal variables that might have shaped EU imports, such as demand data or changes to non-tariff barriers to trade.

6. Crop Substitution

Within the broader policy context of the potential impacts of tobacco control on small producers, one of the main strategies that tobacco control advocates have focused on is investigating the feasibility of crop substitution or transitioning to other forms of livelihood. The challenges lie in incentivizing producers to switch and finding alternatives that are comparable to tobacco in terms of profitability and stability. The existing literature on economically viable alternatives to tobacco production is summarized in this section; however, there is a limited body of research on this topic, particularly with regard to long-term studies and reports on the case study countries (Malawi, Zimbabwe, and Indonesia).

The crop substitutes for tobacco question is complicated by the fact that the viability of alternative livelihood strategies is largely determined by context-specific factors, such as the biophysical requirements for different crops, accessibility to markets, and the existing institutional arrangements for production and technical support. Gaining access to export markets in other agricultural crops, such as horticulture, is an especially vexing problem in many regions of the world (including Sub-Saharan Africa) as these markets become more concentrated and increasingly difficult to enter due to barriers such as certification standards and technical requirements (Fernandez-Stark, et al., 2012; Jaffee, 2011). Moreover, it is generally easier for countries to promote regional economic growth by entering new industry sectors that are somewhat similar in terms of technical, skill, capital, and institutional requirements compared to existing sectors, than it is to develop new sectors that require entirely different skill sets and technical requirements (Hidalgo et al, 2007).

Therefore, any effort to identify potential substitutes should involve an evaluation not only of governance constraints shaping access to other product markets, but also how to build on spillovers from existing skills and experience, while simultaneously challenging producers to develop new competencies and livelihood activities (whether farm or non-farm). Younger farmers are more likely than older farmers to be prepared to pursue alternative livelihood and skills development strategies, although agriculture in developing countries is increasingly characterized by aging farmers as the youth are attracted towards urban centers and service jobs (Geist, et al., 2009; Jacobs, et al., 2000; Brooks, et al., 2013).

There are several particularities of tobacco that affect the feasibility of shifting production to other crops or livelihood strategies. The most frequently cited position on which there is general, albeit potentially misplaced, consensus is that the high returns for tobacco and limited alternatives providing similar margins can increase the difficulty of getting farmers to switch (Pain et al., 2012). This means that any alternatives strategy must select a product that is equally, if not more, profitable than tobacco (Craig, 2008; Geist et al., 2009; Keyser, 2002; Ochola & Kosura, 2007). The relative profitability of tobacco, however, is not necessarily a given. For example, in Kenya, Ochola and Kosura (2007) found that tobacco had the lowest returns per acre compared to the other commercial crops that were studied (passion fruit, water melon, soybeans, pineapple, peppers) and that farmers that had shifted to alternative crops had higher standards of living than those who did not. Both Clay (2004) and FCTC (2008) noted that tobacco prices have been steadily declining due to oversupply and oligopolistic purchasing practices from the 1960s to the

2000s. Lower prices may make alternative crops more competitive relative to tobacco. Moreover, Manos et al. (2009) found that, although substitute crops in the EU were not as profitable as tobacco, when considering the social and environmental impact, and they had fewer negative effects compared to tobacco production, such as the effects on the environment, including deforestation.[14]

In addition to issues of profitability, characteristics such as the stability of the tobacco market, the product's lower perishability, and its viability as a crop in poor or arid soils relative to other crops make tobacco a particularly easy crop for vulnerable small producers (International Tobacco Grower's Association, 2013a). Thus, successful alternatives need to have stable access to markets, and require institutional supports such as access to credit and extension services (Craig, 2008; Geist et al., 2009; Keyser, 2002; Ochola & Kosura, 2007). The lack of these supportive local institutions, in particular, is a key barrier to switching (Craig, 2008; Vargas & Bonato, 2007; Vargas & Campos, 2005), particularly in light of the increasingly prevalent contract farming arrangements in tobacco production, which continue to provide these facilities and can lock producers into long-term debt cycles.[15] Other impediments to change include: local institutional legacies of supporting the tobacco industry (through subsidies or other incentives); high levels of political support for tobacco due to economic dependence on it in the region (e.g., because tobacco makes up a high share of the export earnings); and a general lack of resources for institutions engaged in promoting a switch to alternatives (Geist et al., 2009; Ochola & Kosura, 2007).

Despite the many barriers to switching, case study evidence from several countries suggests that there is indeed potential for switching to alternative crops that are viable for small-scale tobacco farmers. In Zimbabwe, Keyser (2002) found that many crops can outpace tobacco in terms of returns, such as horticultural exports (roses, vegetables), but they require high upfront costs, extension services, marketing assistance, and are skill intensive. In Argentina, Chavez et al. (2012) found that livestock activities and spring-summer crops offered comparable or higher returns than tobacco. Tzouramani et al. (2008) found that sheep farming was a viable alternative to tobacco in Greece, providing higher returns than tobacco. Intercropping tobacco with multiple other crops has also be found to show promise for maximizing returns, land equivalent ratios, and cost-benefit ratios (Kumar et al., 2010). However, these examples primarily support the case for crop diversification, rather than substitution away from tobacco per se.

[14] Studies funded by International Development Research Centre in Canada on crop substitution in Kenya, Bangladesh, and Malawi also showed some promising preliminary results (International Crops Research Institute for the Semi-Arid Tropics, 2011; UBINIG, 2011; Maseno University, 2009).

[15] The structure of contract farming arrangements can also be a barrier, because it may be difficult for smallholders to get out of debt cycles (Geist et al., 2009; Vargas & Bonato, 2007). Moreover, Vargas and Bonato (2007) argue that exiting tobacco production can be difficult for other reasons due to the sunk costs of investing in the infrastructure (e.g., warehouses) and learning the technical skills for tobacco cultivation, especially if the other alternatives require high up-front investments as well.

Several cases suggest that particular kinds of institutional supports can improve the likelihood of successfully switching. For example, farmers associations played a key role in Brazil in successful switching (Vargas & Campos, 2005). In Zambia, maize production was promoted in the 1980s through marketing support and public supply of fertilizers and other inputs, which improved food security but reduced cultivation of export crops with comparative advantage and the ability of producers to escape poverty due to low returns in maize production (Hanjra & Culas, 2011). Finally, in China, a pilot cooperative initiative trained farmers to successfully switch to new crops, and the cooperative structure of this initiative enabled farmers to purchase inputs at bulk rates and obtain the extensive services that they needed (Li, et al., 2012).

There is also evidence from the US and the EU that concerted efforts to switch farmers out of tobacco production may have been effective at reducing tobacco production, but also that this has required substantial resources. Both the EU and the US implemented financial incentives to move producers out of tobacco production. As part of the Common Agricultural Policy, from 2003 to 2011, the EU started phasing out subsidies to tobacco producers and spent €44.8 million to assist them in growing alternative crops (Action on Smoking and Health, 2011). Similarly, in 2004, the US phased out its tobacco subsidies and quotas, and bought out producers in the amount of US $9.6 billion (Bollyky, 2011). Tobacco production (and consumption) has declined in both regions since then. However, based on studies in the US, switching to alternative crops has been less common than switching to non-farm livelihood strategies and intensifying other farm activities that were already underway, such as cattle raising (Craig, 2008).

Despite these successes, it is important to situate these findings in the current context of developing countries where production is expanding, in which the institutional supports are generally very weak and under-resourced. Substitution initiatives in low-income, tobacco-dependent countries are unlikely to succeed without a serious, strategic effort to build institutional capacity for alternative crops or livelihood strategies first.

Overall, the research to date on the viability of crop substitution as a tobacco control strategy suggests that crop substitution initiatives are only one part of a broader strategy that is necessary to successfully mitigate the potential negative economic effects of tobacco control efforts in countries that are highly dependent on tobacco production. In other words, “diversification should be viewed as a broad process, with crop substitution being only one component of the whole,” (Jacobs et al., 2000, p. 332). A comprehensive approach to promoting rural economic development that shifts away from tobacco dependence would include capacity building in a variety of areas (Box 3). Doing so would help address key barriers to switching, such as the high opportunity cost of exiting tobacco, the high risk of entering new markets, and a need to enhance institutional capacity to provide market information, technical assistance, and strategic planning capabilities.

More generally, pursuing these comprehensive strategies to move out of tobacco can contribute to reducing economic dependency on tobacco in countries such as Malawi, which also may begin to erode the political influence of the tobacco industry in those countries. Ultimately, these

conditions would promote the aims of tobacco control in terms of minimizing harm to small producers if the overall demand for and supply of tobacco declines in the long run.

Box 3. Conditions Facilitating a Successful Transition Out of Tobacco

Attempts to promote a shift away from tobacco production and towards alternative livelihood strategies have largely been highly context-specific, with local institutions and existing production systems shaping the possibilities for economic change. Based on the analysis of existing literature above, successful transition strategy will likely require a comprehensive approach that evaluates and builds capacity:

- Promoting **access to new product markets** for small farmers, domestically and internationally (e.g., assistance with compliance with certifications and standards)
- Conducting **place-based evaluations** of which new crops or livelihood strategies are most appropriate based on existing strengths and weaknesses
- Providing **technical assistance** and extension services for new crops
- Enhancing **availability of information**, such as market and climate information to small farmers
- Improving **access to credit** and crop insurance products for smallholders
- Enhancing **infrastructure** appropriate for selected crops (e.g., refrigeration for perishable goods)
- Supporting farmers in developing capacities in **processing** of goods
- Providing **financial incentives** to farmers to exit tobacco production, pay off debts, and invest in the development of new cropping systems and livelihood strategies
- Identify promising **alternative livelihood strategies** such as livestock, dairying, and non-farm activities that can lead to comparable incomes
- Ensure that local state and non-state **institutions,** including cooperatives are sufficiently trained and well-resourced to promote transitions out of tobacco

7. Case Studies

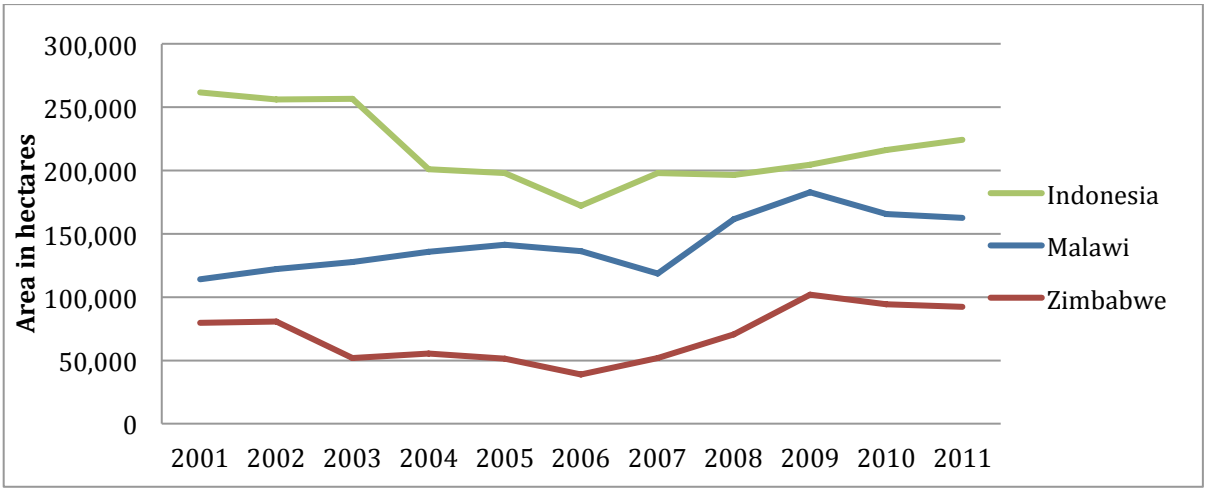
This section examines how the changes in the tobacco GVC described in previous sections are playing out in three countries: Malawi, Zimbabwe, and Indonesia. Malawi and Zimbabwe were selected because they represent very low-income countries with a historical pattern of economic dependence on the tobacco industry, limited industrialization, few alternative pathways to development, and they export far more tobacco than they consume domestically. As a result, small producers in these countries are exposed to greater risk of general economic decline if tobacco control policies or increased trade barriers were to contribute to a significant reduction in tobacco production and livelihood opportunities (Jacobs, et al., 2000). These countries, therefore, can provide insight into how the major trends in the GVC are affecting the position of small producers in tobacco-reliant countries and the feasibility of diversification.

Zimbabwe and Malawi differ in that Zimbabwe has recently undergone a considerable shift in industry structure, from a sector dominated by large-scale producers to one dominated by small-scale producers, while Malawi has not. Zimbabwe also represents an unstable context for tobacco production because of the extended political and economic crisis, which led to an initial drop and subsequent rebound of tobacco exports as the country crisis worsened and then improved in the

mid- to late 2000s. Of the three countries, it is also the first in which China has quickly become an important player in the local industry, providing insights into how Chinese tobacco importers are engaging with other developing country producers.

Although it exports just half the amount of Malawi and Zimbabwe export, Indonesia was selected as a comparative case study in Asia because it produces tobacco on a roughly equivalent scale as Malawi and Zimbabwe, in addition, it is positioned in a very different national context: high domestic demand, a much more diversified economy, a strong history of domestically owned tobacco production, and a global niche in clove cigarette production (*kreteks*). Figure 5 illustrates how the total amount of land under tobacco cultivation in these countries has evolved over the past decade and

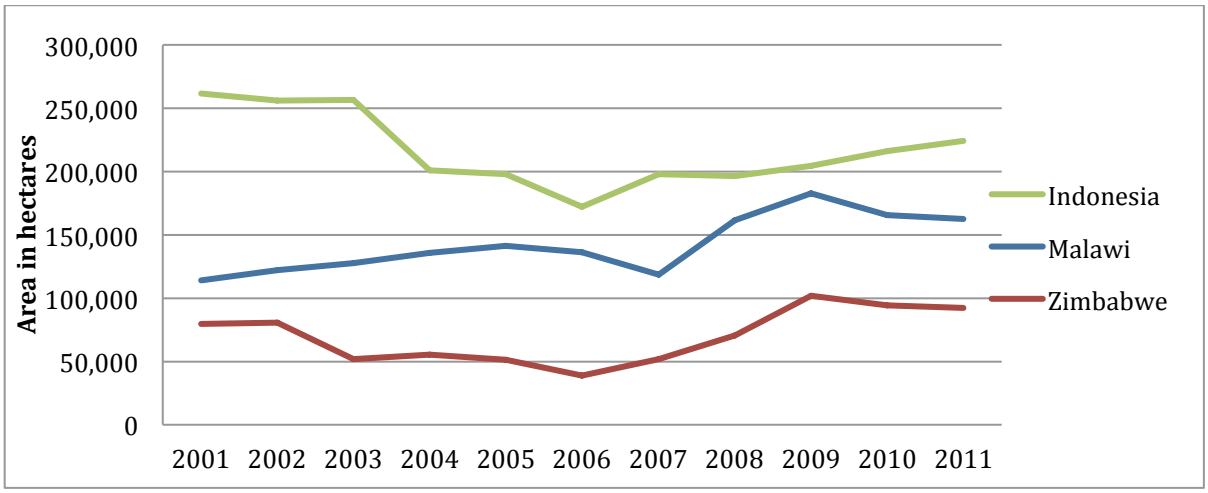
Figure 5: Land Under Tobacco Cultivation



Source: FAOSTAT, 2014.

Table 5 summarizes each country's export share, dependence on tobacco exports, and destination markets.

Figure 5: Land Under Tobacco Cultivation



Source: FAOSTAT, 2014.

Table 5. Position and Significance of Tobacco in Case Study Countries

	Share of world tobacco imports, 2011 (%)	Export values, 2011 (US $, millions)	Tobacco share of country exports, 2011 (%)	Top 5 destination markets in 2001 – export shares	Top 5 destination markets in 2011 – export shares
Indonesia	2.0	191.3	0.3	1. Belgium (18%) 2. Germany (17%) 3. Malaysia (15%) 4. US (13%) 5. Netherlands (12%)	1. Malaysia (33%) 2. Germany (20%) 3. US (11%) 4. Netherlands (7%) 5. Belgium (7%)
Malawi	5.0	489.8	49.5	1. Germany (17%) 2. US (17%) 3. Japan (12%) 4. Netherlands (8%) 5. Russian Fed. (4%)	1. Germany (18%) 2. Russian Fed. (13%) 3. US (7%) 4. Poland (5%) 5. Netherlands (5%)
Zimbabwe	5.4	529.8	27.2	1. China (19%) 2. Germany (12%) 3. UK (13%) 4. Russian Fed. (4%) 5. Japan (3%)	1. China (52%) 2. South Africa (10%) 3. Germany (7%) 4. Russian Fed. (9%) 5. Netherlands (4%)

Source: UN Comtrade, 2013, Raw tobacco, HS Code 240120 ; export values were obtained from world aggregate imports from each country.

Each case study analyzes the evolution of production over time, the role of the government, and the competitive strengths and constraints of the tobacco industry in these countries. Production models for tobacco vary from country-to-country, depending on the history of tobacco production in that country or region, labor supplies, land ownership structure (e.g., communal land versus estates), and government regulation of tobacco marketing. Because tariff structures on tobacco in

Malawi and Zimbabwe have not changed since the early-1990s (Figure 4), it is not feasible to assess the impact of changing tariff structures on tobacco producers and exports. Changes could either be the result of demand shifts influenced by tobacco control and other factors, or by variations in the local institutional context in these countries. In Indonesia, EU tariffs did increase in the mid-2000s, but this had no clear impact on the overall trend of growth in EU tobacco imports over time through that period (WITS, 2013), and external shocks to producers are dampened by strong and growing domestic demand.

7.1. Malawi

Malawi is one of the world's leading tobacco-producing countries, but it is also among the poorest countries in the world. In 2011, Malawi ranked 6th in world exports of tobacco, contributing 5% of world exports. Malawi mainly exports raw tobacco that is stemmed or stripped, accounting for 83% of tobacco exports (UN Comtrade, 2013). Malawi exports mainly to the EU, US, Russian Federation, and Japan. In 2011, however, export destinations shifted away from the US and Japan and towards Germany and the Russian Federation (Table 6). Malawi is one of the world's most tobacco-reliant countries, and the crop contributes 60-70% of foreign exchange earnings (Makoka, et al., 2011). Tobacco is also among Malawi's most significant contributors to annual national tax revenues (Prowse & Moyer-Lee, 2013). Malawi's over-reliance on the tobacco sector leaves it highly vulnerable to market shocks, such as a decline in prices, exchange rate appreciation as well as climatic factors such as drought or hail. In addition, the Malawian subsidiaries of the global tobacco industry have considerable influence in government (Otañez et al., 2006).

Evolution of Tobacco Production in Malawi

There are two main producing regions in Malawi: the Central Region and the Southern Region. While in the 1920s and 1930s, tobacco production was split between estate and smallholder production, today it is dominated by smallholder production with some remaining estates (Lea & Hanmer, 2009; Prowse, 2011). Both family labor and child labor are widespread in Malawi (Commission of the European Communities, 2003; Otañez et al., 2006). Tobacco farmers are often organized into collectives, or clubs, for the purposes of improving access to credit, supportive services, and inputs (Negri & Porto, 2008). Tobacco club membership has increased tobacco sales per acre among smallholders by 45-89 % (Negri & Porto, 2008). Relative market power of these groups is limited, however, as just two firms, Alliance One and Limbe Leaf,[16] control 95% of the raw tobacco market in Malawi (World Bank, 2009).

Role of Government

After decades of total government control of the tobacco industry, structural reforms in 1995 led to widespread privatizations in Malawi, consistent with the global trend of liberalization and

[16] Limbe Leaf also is a joint venture between Universal Leaf and a Malawian firm, with Universal Leaf owning a 58% share (Universal Corporation, 2012).

privatization. Nevertheless, the Malawian government continues to play an active role in the sector. In addition to the fact that the country has such high dependence on the sector (tobacco represents 50% of total exports – see Table 6) and, therefore, has political leverage (Prowse & Moyer-Lee, 2013), several politicians actually own tobacco farms or have ownership stakes in leaf-processing companies (Makoka et al., 2011). The government holds a 51% control of Auction Holding Limited, the organizing body that promotes and regulates auction sales of tobacco in Malawi (FAO, 2003; UNCTAD, 2011). In addition, in 2006, the Malawian government became further involved with auction sales by establishing a tobacco-purchasing company, Malawi Leaf, to both upgrade the government's involvement in the tobacco value chain and to inject greater competition amongst the few existing large buyers (Prowse & Moyer-Lee, 2013).[17] Furthermore, the government has maintained at least partial ownership of Malawi's only agricultural marketing board, Agricultural Development and Marketing Corporation (ADMARC), even though bureaucratic inefficiency and cost-ineffectiveness are commonplace (Chinsinga, 2011).

The government has launched several support programs for the tobacco sector, such as the fertilizer subsidy program in 2006/07 to increase access to this expensive input (Chinsinga, 2011), and a 2012 initiative to establish minimum prices for tobacco at auction (Bloomberg, 2012). These efforts confirm the importance of tobacco to the Malawian economy, although there have also been repeated allegations of collusion between industry lobbyists and ministry officials – inciting anger amongst tobacco producers (Otañez, et al., 2007; Mandondo & German, 2011).

Unlike most other tobacco exporting countries, nearly all tobacco sales are conducted via silent auction systems rather than through contract farming relationships (ASI, 2012). Recently, however, the government decided to allow up to 33% of sales to be conducted through outgrower contracts rather than auctions sales (ASI, 2012). This led to increased use of outgrower contracts between small producers and the global leaf merchants and MNCs. Therefore, the global trend of increased outgrower contracting has begun to take root in Malawi, and as it does, the government's role in the industry will likely shrink as well.

Competitive Advantages and Challenges

Malawi's competitive advantage in tobacco largely derives from its low labor costs, in large part the result of unpaid familial and child labor on smallholder operations (Tchale & Keyser, 2010; UNCTAD, 2011). Low wages in the tobacco industry can also be attributed to the low national minimum wages in Malawi in general, and to the high level of labor informality occurring on tobacco farms that often suppresses remuneration below minimum wages. Additionally, Malawi's comparative advantage in tobacco farming may stem from its lack of commercially viable alternatives to tobacco production and the possibility that the tobacco MNCs are therefore using outgrower contracting arrangements to secure lower prices from small producers than they would

[17] While Malawi Leaf has not been entirely successful in its efforts, recent investments in the company by private sector investors have improved access to upstream linkages, stabilizing its competitive position (Prowse & Moyer-Lee, 2013).

have paid at auctions (in other words, it is a low-cost, low labor standards strategy) (UNCTAD, 2011).

Tobacco producers also contend with many barriers to competitiveness in Malawi. Fertilizer prices are relatively high because there are no domestic blending capabilities, yields are low compared to countries such as Zambia, and the marketing and transport systems are in particular need of improvement (Tchale & Keyser, 2010). Furthermore, in addition to the strong market power of leaf merchants driving down prices received by producers, rampant inefficiencies in tobacco marketing and competition protection institutions, as well as weak enforcement of government policies, are adversely affecting sustainable profit margins amongst smallholders (UNCTAD, 2011).

These findings suggest that the changes in governance structures and institutional arrangements in the tobacco GVC are likely to have more of a negative effect on the market position and profitability of small producers in Malawi than changing regulations in the global market. Given that global demand for tobacco has increased and Malawi's overall position as a leading tobacco exporter remains strong, it is very unlikely that tobacco control policies have yet had any direct detrimental effect on small producers in Malawi. Nonetheless, further research would be useful to examine how the changes in governance and institutional arrangements are affecting small producers, such as their profitability, long-run sustatinability, and whether their participation in outgrower schemes reduces or increases the likelihood of diversification into other economic development pathways.

7.2. Zimbabwe

In 2011, Zimbabwe exported 5.4% of world raw tobacco, occupying 5th place overall among top exporting countries. The crop made up over 27% of the country's exports in 2011, followed by cotton and sugar, which made up 11% and 7 % of export values in 2011, respectively (UN Comtrade, 2013). Zimbabwe has a history of tobacco production, having reached a peak production volume of 522 million pounds in 2000 (Green, 2012). Nevertheless, it was a considerable achievement for tobacco exports to be as high as they were in 2011, due to the economic crisis in the mid-2000s, which occurred as a result of the Fast Track Land Reforms (FTLR). This process involved nationalization of large-scale commercial farms and the collapse of the commercial agriculture sector, resulting in high inflation rates, and the imposition of economic sanctions by the EU, US, and other countries starting in 2002.

In 2004, tobacco output plummeted by 72% relative to 1990s averages (Moyo, 2011a). The industry reached a low of 105 million pounds in 2008, but it rebounded to 330 million pounds in 2012 (Green, 2012). The FTLR radically reconfigured the structure of the industry, such as replacing large farms with smaller ones, and this makes the country a special case for investigating how trade policy affects small producers and for exploring the feasibility of diversification, since many new landholders were new to agriculture and thus had limited experience in the production of tobacco or any other crop.

Evolution of Tobacco Production in Zimbabwe

Production models for tobacco have been substantially re-organized as a result of the FTLR. Prior to land reform, there were 700 large-scale and 3,500 small-scale tobacco producers employing between 150,000 and 250,000 permanent workers (mostly on the large-scale farms) (Moyo, 2011b; Scoones et al., 2010). Since land reform, there has been a dramatic growth in the number of government-registered smallholder tobacco farmers, which increased by 94% in the 2012/2013 season, from 33,800 farmers in the 2011/2012 season, to 63,352 farmers in the 2012/2013 season (AfDB, 2012). With comparatively lower household assets combined with weakened financial institutions, these producers were more likely to undertake contracts for the production of tobacco and outgrower schemes expanded considerably as a result (Chambati, 2013; Moyo, 2011a). Furthermore, due to the lack of access to credit, farmers have turned to unpaid or intermittently paid family labor (including women, children, and extended relatives) to produce tobacco; waged labor in the formal sector became increasingly characterized by temporary work arrangements as laborers preferred guaranteed piece-rates as payment of monthly wages was unpredictable and undermined by rampant inflation (Chambati, 2013).

Similar to Malawi, commercial buying and selling of tobacco in Zimbabwe takes place through two systems: auctions and outgrower contracting arrangements. Three tobacco auction houses[18] together account for approximately 38% of all sales in 2013, while contract farming accounts for the remaining 62% (AfDB, 2013), and as such commands a far greater percentage of total sales than in Malawi (33%). The share of contract farming has also been increasing over time. In 2011, the proportion of auction sales in Zimbabwe was 44%, while the proportion of contract farming was only 56% (AfDB, 2011; Chambati, 2013; Moyo, 2011a).

These new dynamics are particularly favorable for leaf merchants and MNCs, as smallholders are less able to resist lower price margins than medium or large-scale farms that have more access to alternative sources of credit (Moyo, 2011a). This has enabled merchants to use outgrower arrangements as a low-cost strategy in Zimbabwe as well, whereas doing this would have been more difficult prior to the FTLR. However, the purchasing dynamics in the Zimbabwean tobacco industry amongst leaf merchants and tobacco MNCs are more competitive than in Malawi, with more than 13 firms in 2012/13 (ASI, 2012; TIMB, 2011). Nonetheless, the top four companies accounted for more than 56% of total sales (action and contract) in the 2010/2011 season, signifying a strong presence of power concentrated amongst a few firms[19] (TIMB, 2011), and suggesting the global trend of consolidation and market concentration is playing out in Zimbabwe as well, even if it is to a lesser extent than in Malawi.

[18] : Tobacco Sales Floor, Boka Tobacco Floor, and Premier Tobacco Floor.

[19] These lead firms and their associated percentages are as follows: Zimbabwe Leaf Tobacco: 20.72%; Northern Tobacco: 19.78%; FC Tian Ze: 14.36%; Mashonaland Tobacco Company (MTC)/Dimon: 12.61%

Role of the Government

State support for farmers has been very limited since the mid-1990s, although it has been higher in the 2000s than in the 1990s, mainly through price controls on agricultural commodity markets, trade, and financial markets as well as subsidies for targeted food and input prices between 2001 and 2009 (Moyo, 2011a). In general, farmers have received more support from the tobacco industry itself (through the contracting arrangements set up by the multinational buyers) than the government in the form of access to credit, advances, and extension services (World Bank, 2009). Rising challenges of climate change (Mano & Nhemachena, 2007) and continued struggles with access to credit suggest that there is an ongoing need for more support for these new smallholder farmers to be successful in areas such as increased access to irrigation infrastructure, extension services, and weather information. Lack of support from the government leaves producers more willing to engage in contract tobacco farming arrangements and can reduce potential for substitution and diversification in absence of similar schemes in other produce lines.

Competitive Advantages and Challenges

In addition to natural competitive advantages deriving from its climate and soil which are very conducive for growing tobacco (Rubert, 1998),[20] the Zimbabwean tobacco industry has long benefited from access to low-cost labor, often through the use of migrant or family labor (including women and children). Historically, the tobacco-growing regions of Lomagundi and Mazoe benefitted from being located near the northern end of two major regional labor migration routes between Nyasaland and Mozambique and the rest of Southern Africa (Rubert, 1998). Given the labor intensity of tobacco, having access to this low-cost labor is a significant competitive advantage for Zimbabwe.

Most of the challenges to Zimbabwe's tobacco industry competitiveness stem from the marked instability and fundamental changes to the structure of the agrarian economy. The newly resettled farmers have had insufficient access to inputs, extension services, credit, and irrigation infrastructure (Chambati, 2013; Moyo, 2011a). In addition, the smallholders that are under contract farmer arrangements with global buyers often have very little market power and therefore (in the absence of state supports) carry a disproportionate share of the risks in tobacco production, such as risks from drought, pest infestations, etc. The non-payment of wages and use of unwaged family or kinship network labor is an indicator that the farmers are trying (perhaps unsuccessfully) to push off some of this risk using a variety of strategies.

The Rising Role of China in Zimbabwe's Tobacco Sector

China is taking on a new importance in sustaining Zimbabwe's transition from the old agrarian system to the new one in the tobacco chain (Moyo, 2011a; Mukwereza, 2013). This is affecting the structure of the industry, its priorities, and the actors involved (Mukwereza, 2013). With growing demand for tobacco at home, China has been heavily involved, donating and lending

[20] For example, the Highveld region has excellent alluvial soils, which is well suited for growing Virginia flue-cured tobacco varieties.

Zimbabwe the capital to stimulate growth in the tobacco industry, improving access to inputs, and building capacity for extension services. The Chinese government donated US$30 million to Gwebi Agricultural College to improve R&D, training, and technological exchange between China and Zimbabwe (Mukwereza, 2013). This arrangement will be managed by a Chinese firm for three years, following which authority will be handed over to the Zimbabwean government (Mukwereza, 2013). There has also been a rapid growth in Chinese buyers of Zimbabwean tobacco, who have offered much higher prices to farmers and interest-free loans; however, they marked up the prices for inputs (Mukwereza, 2013).

The changes in the institutional context in Zimbabwe created a whole new class of small producers. While these producers have more economic opportunities than under the old land regime, the changes in governance and institutional structures within Zimbabwe continue to make the livelihoods of smallholders quite insecure compared to the other case study countries, and the long-run sustainability of tobacco production for small producers will remain uncertain until the situation stabilizes. On the other hand, with the correct supportive policies for the production of other crops, the instability could perhaps be an opportunity to promote a more diverse array of sectors in Zimbabwe, because the small producers are not yet as enmeshed in the tobacco production cycles as they are in other tobacco-reliant countries. Therefore, this case emphasizes the importance of the national and local contexts for shaping the position of small producers and prospects for diversification.

7.3. Indonesia

In contrast to the earlier two cases, the Indonesia case helps illustrate how the global trends in demand, governance, and institutional arrangements play out for small producers in a country with a strong niche in tobacco, growing domestic demand for tobacco, and a more diversified economy. Indonesia not only produces and exports raw tobacco, but also it has a long history of domestic cigarette manufacturing and a special niche in clove cigarettes, or kreteks.[21] In 2011, Indonesia ranked 12th globally for tobacco exports and 14th for cigarette exports, supplying approximately 0.3% of tobacco and 1.3% of cigarettes to the world market. Malaysia is Indonesia's largest destination market for raw tobacco exports (22% in 2011), followed by Germany, the US, and the Netherlands (Table 6). This global market share has slowly risen over the past decade despite significant domestic demand; Indonesia has the 4th largest (and growing) domestic market for cigarettes in the world (Euromonitor, 2013a).

Indonesia's long history of domestic tobacco production has resulted in the industry playing a very important role in the national economy. After the public sector, the clove cigarette industry is the 2nd largest employer in Indonesia, employing 4 to 17 million, directly and indirectly

[21] In the mid-2000s, Indonesia produced 63% of world clove cigarettes (Achadi et al., 2005). As a niche within the cigarette market, kreteks also fall under the same regulatory framework as regular cigarettes. In fact, they are more hazardous to human health than regular cigarettes due to higher tar and nicotine content (Arnez, 2009).

(Arnez, 2009). However, the significance of the tobacco industry is declining in terms of employment, production, and share of exports as the economy has diversified and per capita income has risen. Domestic tobacco production declined by 36.2% from 2000 to 2011 and the country has begun to rely more on imports to support its growing domestic market.[22]

Evolution of Tobacco Production in Indonesia

Commercial tobacco production in Indonesia dates back to the late 1800s when the sector was dominated by large plantations (Achadi et al., 2005; Boomgaard, 1999). In 2000, tobacco production in Indonesia was made up of 98% smallholders,[23] who typically supplied domestic and international tobacco companies through outgrower arrangements. Within these outgrower contracts, farmers have little bargaining power on prices. However, it has been common for Indonesian tobacco farmers to rotate and mix tobacco with other crops and for them to have fairly diverse income sources (Keyser & Juita, 2005).

Although long dominated by kreteks (clove cigarettes) (Arnez, 2009; Reid, 1985), [24] which were cheaper than "white" or regular cigarettes, demand has grown for "white" cigarettes, which are seen as a symbol of modern masculinity and sophistication—a colonial legacy (Reid, 1985). In the 1990s, a combination of mechanization, government taxation policies, and the government clove monopoly led these firms, mostly domestic,[25] to consolidate around both product lines, shrinking the size of the small and medium-sized sector and benefiting the larger domestic firms, such as Gudang Garam, Djarum, Bentoel, and Sampoerna (Arnez, 2009).

More recently, large multinationals have started taking over ownership of the domestic tobacco industry in Indonesia as part of a strategy to break into the growing domestic tobacco consumer market in Indonesia. For example, PMI took over Sampoerna in 2005 and now markets its Marlboro brand through Sampoerna's operations in Indonesia (Arnez, 2009), and BAT acquired Bentoel in 2009 (Aguinaga Bialous, et al., 2012). Facing this escalation of competition from global firms, domestic tobacco companies have responded by expanding their marketing efforts and diversifying into other sectors (Arnez, 2009). In addition, they have been quite aggressive at lobbying the government against the implementation of tobacco control policies, which they have generally succeeded at given that Indonesia has not yet signed the FCTC (Arnez, 2009). These findings suggest that the global pattern of liberalization has eroded the competitiveness of the domestic tobacco industry in Indonesia and expanded the access that these MNCs have to the growing Indonesian market.

[22] In the 1970s, the tobacco industry provided 38% of the manufacturing employment, but by the mid-2000s that had declined to 5.6% as the economy diversified (Achadi et al., 2005).

[23] In 2000, 925,000 farmers grew tobacco in Indonesia (Keyser & Juita, 2005).

[24] Kreteks are actually more damaging to human health than regular cigarettes; but at the same time, they have become a symbol of modern Indonesian national identity and play a key role in economic livelihood strategies and export earnings for the country (Arnez, 2009; Reid, 1985).

[25] The kretek sector had fewer multinationals (such as BAT, which started producing in Indonesia in 1924) and more small-scale producers and Indonesian (or Chinese-Indonesian) ownership (Reid, 1985).

Role of the Government

The government has played a significant role in the development of the tobacco industry in Indonesia since colonialism, although support has tended to facilitate the growth of large firms rather than small firms or producers (Reid, 1985; Boomgaard, 1999; Arnez, 2009). For example, in the late 1960s and 1970s, manufacturers started to mechanize, but the government only issued limited licenses to mechanize—and these were generally restricted to larger companies (Arnez, 2009). In addition, the tax structure primarily benefited large firms (Achadi et al., 2005; Arnez, 2009).

Competitive Advantages and Challenges

Indonesia's competitive advantage is not particularly strong on the basis of low costs, given that it is facing strong competition from countries such as Zimbabwe (Keyser & Juita, 2005), and that the country's economy has diversified, providing more opportunities in non-agricultural employment. Nevertheless, growing domestic demand continues to be a source of inward capital investment interest from MNCs, which have intensified their efforts to access this market given the shrinking demand for cigarettes in traditional end-markets (Arnez, 2009). Indonesia's strongest competitive advantage lies in its specialization in the kretek (clove cigarette) niche. Thanks to this established tradition in Indonesia, predating regular "white" cigarettes (Arnez, 2009), local firms had long since already developed strong skills in rolling kreteks that could be incorporated into cigarette manufacturing.

Meanwhile, tobacco control has been limited and domestic demand continues to grow. The recent trend of declining production and the reduced importance of tobacco among total exports suggest that it is not tobacco control that has the most potential to harm smallholders, but rather these broader dynamics in the industry of consolidation, liberalization, and domestic industrial policy. Diversification may be easier to accomplish in Indonesia given the trends are already moving in that direction, and policy could focus instead on the problematic aspects of foreign acquisitions and MNC consolidation, as well as improving domestic tobacco control through public health campaigns, etc. Therefore, this case shows the importance of customizing tobacco policy to the country context, rather than promoting the same policies everywhere.

8. Conclusions

Tobacco industry representatives and tobacco control advocates alike have expressed concern about the potential for tobacco control efforts to contribute to economic decline in high poverty areas that are heavily concentrated in tobacco production. However, GVC analysis reveals three important findings that suggest that a new approach to this discussion is warranted. First, it indicates that the predominant trend in trade patterns is a geographical shift out of old markets and into new ones, resulting in an increase in demand and not a contraction. In response, tobacco MNCs are expanding their presence and influence in Asia. For small producers in tobacco-dependent countries, this could affect the type of tobacco grown, the business networks that are employed to access markets, the price points (because it is generally a lower-value market

segment), and the quantity of tobacco sold—which is increasing, not decreasing. Given these trends, the main risks are that the lower price points could erode smallholder profitability.

Second, our GVC research highlights that the changes in the governance structure of tobacco impacts smallholders in important ways, perhaps more so than tobacco trade itself. Increased consolidation of actors at the two highest-value segments of the chain—the global tobacco MNCs and leaf merchants—means that power dynamics are becoming more uneven in the value chain. At the cultivation stage, buyers have colluded to keep prices down and, in other instances, marked up input prices to take advantage of the poor bargaining position of producers. The presence of these forms of market power abuse suggests that, despite growing demand, there is potential for tobacco to become less attractive to smallholders in the long run. This could increase the benefits of crop substitution programs, assuming that alternative livelihood activities do not have similar problems.

The third key finding from GVC analysis relates to how changes in the institutional organization of production networks affect small producers. Specifically, the growth of outgrower schemes has increased market access for smallholders in the short run. However, in the long run this institutional set-up can lead to growing indebtedness and dependency on tobacco. Thus, even if small producers favor outgrower schemes because they offer short-run benefits that were previously less available, they may be taking on more risk than is sustainable over a longer period of time—particularly if there is an absence of infrastructure to help protect against factors such as drought or new pest infestations. In addition, the cycles of debt may increase barriers to switching to alternative crops or livelihood strategies.

Overall, based on the literature, trade data, production data, and case studies of Malawi, Indonesia, and Zimbabwe, we found little support for the claim that tobacco control (or trade policy generally) directly reduces demand and thus income for smallholders in tobacco-dependent countries. Instead, the evidence suggests growth in smallholder tobacco production in these countries. Furthermore, prices are decreasing and raw tobacco production is shifting to lower cost countries that are often more tobacco dependent. How much trade policy and/or tobacco control (rather than other factors) contribute to these trends is a question that requires more comprehensive qualitative and quantitative research because the relationships are highly variable and complex.

In conclusion, GVC analysis suggests that the changing governance dynamics and institutional arrangements may be more important in shaping the position of small producers than changing trade policy per se. Growth in smallholder production, increased market access, and expansion of raw tobacco production in lower cost tobacco dependent countries, however, does not necessarily translate into a sustainable economic development path or higher living standards for small producers. The rise of outgrower contracting and uneven market power dynamics is leading to higher risk burdens for small producers, cycles of debt bondage and dependency, and declining profitability of small producers. This indicates an adverse incorporation of small producers, a situation in which entry seems attractive in the beginning but ultimately results in the erosion of the long-term economic security of smallholders because of their weak bargaining position.

Box 4. Policies to Support Smallholders in the Context of Changing Dynamics in the Tobacco Global Value Chain

Promote awareness of governance problems in the tobacco GVC and abuses of market power – The global tobacco MNCs and leaf purchasing companies are becoming more powerful in the GVC as the higher-value stages of the chain consolidate and become heavily concentrated. Increased market power enables these firms to shore up their access to growing markets in Asia as well as to exploit small producers (e.g., colluding to keep prices low). Raising awareness of these practices and combating market power abuses may help encourage diversification at the producer level and enable Asian governments to more effectively regulate the influence of tobacco MNCs.

Target the debt bondage cycles in outgrower arrangements for reform - Because outgrower schemes weaken the bargaining power of producers and increase their burden of risk in the long run, they make it harder for producers to shift out of tobacco production due to the debts they incur. Governments and tobacco policymakers can target this aspect of outgrower contracts for reforms in order to prevent further downgrading of producers' standards of living and to lower the opportunity costs of exiting tobacco production. Financial incentives to exit tobacco production have been implemented in the US and EU with promising results, although this was a resource-intensive solution. Another possible strategy is to place more restrictions on outgrower contracting to reduce the likelihood that producers will end up in unsustainable debt cycles.

Strategically reduce the switching costs of diversification into specific sectors – Many alternative crops, such as horticulture, have high barriers to entry, consolidated buying markets, and other requirements that make it expensive for tobacco producers to switch. Strategically targeting diversification efforts to a specific set of alternatives in a particular place can help ensure that the necessary infrastructure, skills, supportive services, and market access channels are in place to motivate tobacco producers to diversify. Engaging local institutions and producer collectives in this process leads to promising results.

Promote more comprehensive economic development initiatives, especially in rural tobacco-dependent areas – The existing literature on crop substitution, combined with the findings of the GVC analysis, suggests that substitution initiatives alone are not a highly viable strategy for reducing tobacco production in tobacco-dependent regions. Given the current trends in the tobacco GVC, promoting a more holistic approach to economic development in these areas that includes strategically enhancing institutional capacity, infrastructure, access to markets for targeted sectors, and workforce skills is a precondition for diversification and more sustainable economic development.

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