# CURTAILING SUBSIDY WARS IN GLOBAL TRADE: REVISITING THE ECONOMICS OF WORLD TRADE ORGANIZATION LAW ON SUBSIDIES

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CONTENTS



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## ABSTRACT

The positive influence of subsidies on merchandise exports is well known from international trade theory literature. However, the empirical evidence on the relationship itself remains ambiguous. This article fills a gap in the existing pool of research by conducting a panel data empirical analysis over two decades for 140 countries to understand the relationship between their overall budgetary subsidies and aggregate merchandise export inclination. The detailed research findings of this paper underline the importance of going beyond the "Bali Package" agreed in December 2013 and concluding the Doha Round Negotiations of the World Trade Organization ("WTO"). The outline for the Bali agreement was that the Members of the WTO would exercise utmost restraint in using any form of export subsidy. Because of this inability to reach binding decisions, the Bali agreement is open ended and relies on good will and restraint. Fundamentally, this article stresses the positive impact of disciplining subsidies in particular in no uncertain terms. The results of this article lead to two important conclusions. First, the economic analysis shows that developing countries should realize that a subsidy-based trade war is more likely to put them in a disadvantageous position *vis-à-vis* the WTO developed members; and second, the legal analysis shows that the Agreement on Subsidies and Countervailing Measures ("ASCM") requires urgent clarification in the negotiating tables to ensure the global economy does not suffer major turbulences in the coming years.

## I. INTRODUCTION

The objective of establishing the World Trade Organization ("WTO") in 1995 has been to enhance international trade flows through elimination or reduction of various unfair trade practices. While the WTO negotiations have been able to phase out the traditional trade barriers like import quotas and have been broadly successful in reducing the tariff barriers, limiting the trade distortions arising from subsidies still

remains an area of concern.[1] The situation before the Ninth Ministerial Conference[2] did not look promising.[3] "[A] number of countries opposed any legally binding decision in Bali, including lower limits on export subsidies."[4] The outline for the Bali agreement was that WTO countries would "'exercise utmost restraint' in using any form of export subsidy."[5] "Because of this inability to reach binding decisions, the Bali agreement is open ended and relies on good will and restraint."[6] "In all, the agricultural package in the Bali agreement has moved the stakes on very little."[7] "With no legally binding arrangements, the [gray areas in the] goodwill statements are open to abuse and the disputes' panel of the

1. To offset price advantages of imported products, states make specific monetary payments or provide tax relief to domestic producers, allowing them to lower domestic or export prices and obtain a competitive advantage *vis-à-vis* competing foreign products. Subsidies exist in different forms (export subsidies, domestic subsidies, production subsidies or decoupled subsidies [direct payments]). Subsidies are specific and different from general payments, such as social security to which the public at large or large segments of the population are entitled. *See generally* M.C.E.J. BRONCKERS, SELECTIVE SAFEGUARD MEASURES IN MULTILATERAL TRADE RELATIONS: ISSUES OF PROTECTIONISM IN GATT EUROPEAN COMMUNITY AND UNITED STATES LAW (1985); T. Josling & S. Tangermann, *Production and Export Subsidies in Agriculture: Lessons from GATT and WTP Disputes Involving the US and the EC*, *in* TRANSATLANTIC ECONOMIC DISPUTES: THE EU, THE US, AND THE WTO 207 (Ernst-Ulrich Petersmann & Mark A. Pollack eds., 2003); James Rude, *Under the Green Box: The WTO and Farm Subsidies*, 35 J. WORLD TRADE 1015 (2001).

2. The WTO Ninth Ministerial Conference was held in Bali, Indonesia, from the 3rd to the 6th of December 2013. *See Ministerial Declaration of 7 December 2013*, WORLD TRADE ORG., *available at* http://www.wto.org/english/thewto_e/minist_e/mc9_e/bali_texts_combined_e.pdf (last visited Jan. 6, 2014)[hereinafter *Bali Declaration*]; *see generally* Julien Chaisse & Mitsuo Matsushita, *Maintaining the WTO's Supremacy in the International Trade Order – A Proposal to Refine and Revise the Role of the Trade Policy Review Mechanism*, 16 J. INT'L ECON. L. 9 (2013); Julien Chaisse, *Compliance with International Law as a Process— Deconstructing the Obligation of Conformity*, 38 FORDHAM INT'L L.J. (forthcoming 2015).

3. *World Trade Organisation Truly Delivers*, DAIRYVIETNAMCO., LTD., *available at* http://www.dairyvietnam.com.vn/en/News/World-Trade-Organisation-Truly-Delivers.html (last visited Nov. 16, 2014). "In May, the G–20 group of developing countries had called on developed countries to [reduce in half] their ceilings on the money they spend on export subsidies by the end of 2013 and phase in a 540-day limit in the repayment period for export credit." *Id.* "The final target is 180 days." *Id.* "The G-20 also called for a limit on the quantities of subsidized exports, at the average actually exported with subsidies for 2003–2005." *Id.*

4. "The United States in particular wanted to grant this exception on a temporary basis only." Christian Ignatzi, *WTO Bali Agreement Expected to Boost Growth*, DW (July 12, 2013), *available at* http://www.dw.de/wto-bali-agreement-expected-to-boost-growth/a-17278088 (last visited Nov. 16, 2014). Also, "India wanted to make sure that food would remain affordable for its poor population of 800 million and therefore had insisted on permission to subsidize rice and grain." *Id.*

5. *See generally Bali Declaration*, *supra* note 2.

6. *World Trade Organisation Truly Delivers*, *supra* note 3.

7. *Id.*

[WTO] could be just as busy as it has been with countries arguing over subsidies and tariffs and quotas as much as they have over the last [two decades.]"[8]

The present analysis contributes to the understanding of the relationship between overall government financial transfers (i.e., budgetary subsidies) and aggregate merchandise exports as a percentage of gross domestic product ("GDP") in two ways. First, it shows that the Agreement on Subsidies and Countervailing Measures ("ASCM") requires clarification in the negotiating tables. Second, developing countries should realize that a subsidy-based trade war is more likely to put them in a disadvantageous position *vis-à-vis* the developed WTO members.

Provision of subsidies to local players can be explained by several underlying motivations from the standpoint of national governments, namely, industrial development, facilitating innovation, supporting national champions, securing environment-related objectives, ensuring redistribution, etc.[9] The subsidies can be provided to the local players through interventions both in the input as well as output markets. The efficacy of subsidy policy as a strategic trade instrument is however crucially linked with the local industry's learning capability and the extent to which the domestic and foreign goods are substitutable.[10] The trade theoretic literature notes that in a scenario characterized by fast capital mobility, imposition of import tariffs leads to better welfare implication as compared to export subsidies.[11] Nevertheless, presence of domestic distortions in lower income countries result to frequent deployment of subsidy measures to further long-term goals, as they function as more efficient trade policy instrument *vis-à-vis* import tariffs.[12]

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8. *Id.*

9. *See* Terry Collins-Williams & Gerry Salembier, *International Disciplines on Subsidies: The GATT, the WTO and the Future Agenda*, 30 J. WORLD TRADE 5 (1996); *see also* Simon Lester, *The Problem Of Subsidies as a Means of Protectionism: Lessons From the WTO EC — Aircraft Case*, 12 MELBOURNE J. INT'L L. 1, 5 (2013).

10. *See* Marc J. Melitz, *When and How Should Infant Industries be Protected?*, 66 J. INT'L ECON. 177 (2005); Kym Anderson, *Subsidies and Trade Barriers* (paper presented at a roundtable in Copenhagen on 24-28 May 2004, as a part of the Copenhagen Consensus project) *available at* http://www.copenhagenconsensus.com/sites/default/files/cp-tradefinished.pdf (last visited Nov. 16, 2014).

11. *See* Tanapong Potipiti, *Import Tariffs and Export Subsidies in the World Trade Organization: A Small – Country Approach* (ARTNeT Working Paper No. 119, Bangkok, ESCAP, 2012), *available at* http://www.unescap.org/sites/default/files/AWP%20No.%20119.pdf (last visited Nov. 16, 2014).

12. *See generally* Jagdish Bhagwati & V. K. Ramaswami, *Domestic Distortions, Tariffs*

Apart from the aforesaid determinants, promoting exports of domestic players who are in competition with their foreign counterparts in the global market is a major driving motive for providing subsidies.[13] The standard trade analysis observes that the subsidies provided by national governments enable the domestic producers suffering from cost disadvantage to sell their products in the international markets at a relatively cheaper price, thereby resulting in a rise in their exports.[14] The theoretical relationship between subsidies and exports is clearly observed, irrespective of market structure, as the policy is capable of delivering both in the presence of competitive, as well as oligopolistic, markets.[15] Several export subsidy programs are operational in European countries and the U.S., which provide their firms greater advantage *vis-à-vis* their foreign competitors.[16] The adoption of export subsidies as a strategic policy instrument has been reported extensively in the literature.[17] For instance, production and export subsidies in a home country may motivate multinational corporations from abroad to locate production facilities there.[18]

The trade-distorting effects of subsidies in general, and export subsidies in particular, are widely acknowledged to be in conflict with core WTO principle of fair trade. The mandate of the ongoing WTO negotiations under the Agreement of Agriculture ("AoA") and the Agreement on Subsidies and Countervailing Measures ("ASCM") are to ensure better discipline on both direct (e.g. direct payment) as well as indirect (e.g. revenue foregone by preferential electricity and fuel price, lowered interest payment on restructured loans) financial transfers.[19] As

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*and the Theory of Optimum Subsidy*, 71 J. POL. ECON. 44, 44-50 (1963).

13. *See generally* Gary N. Horlick, *A Personal History of the WTO Subsidies Agreement*, 47 J. WORLD TRADE 447 (2013); *see also* James A. Brander & Barbara J. Spencer, *Export Subsidies and International Market Share Rivalry*, 18 J. INT'L ECON. 83 (1985).

14. *See generally* Horlick, *supra* note 13; *see also* Brander & Spencer, *supra* note 13.

15. *See* Cees van Beers, Jeroen C. J. M. van den Bergh, André de Moor & Frans Oosterhuis, *Determining the Environmental Effects of Indirect Subsidies: Integrated Method and Application to the Netherlands*, 39 APPLIED ECON. 2465 (2007); *see also* Avinash Dixit, *International Trade Policy for Oligopolistic Industries*, 94 ECON. J. 1 (1984).

16. *See* INTERNATIONAL TRADE CENTRE, NATIONAL TRADE POLICY FOR EXPORT SUCCESS, U.N. Doc. P248.E/DCP/BTP/11-XI, U.N. Sales No. E.12.III.T.3 (2011).

17. *See* Kyle Bagwell & Robert W. Staiger, *Strategic Trade, Competitive Industries and Agricultural Trade Disputes*, 13 ECON. & POL. 113 (2001); *see also* Andrew Y. Lemon, *The Peril of Implementing Export Subsidies in the Presence of Special Interests* (Feb. 21, 2003) (preliminary draft) (on file with the Yale University Department of Economics), *available at* http://economics.yale.edu/sites/default/files/files/Workshops-Seminars/Industrial-Organization/lemon-030225.pdf (last visited Nov. 16, 2014).

18. *See generally* Davin Chor, *Subsidies for FDI: Implications from a Model with Heterogeneous Firms*, 78 J. INT'L ECON. 113 (2009).

19. *See generally Legal Texts: A Summary of the Final Act of the Uruguay Round*,

per AoA and ASCM provisions, subsidies are classified under two broad categories, namely, actionable (i.e. subsidies which are directly linked with production and hence trade-distorting) and non-actionable (i.e. subsidies which are not directly linked with production and hence have lesser impact on trade). The goal of the current WTO negotiations is to limit the actionable subsidies[20] (e.g. certain forms of fisheries subsides, amber and blue box subsidies in agriculture) and discontinuation of all forms of agricultural export subsidies.[21] While the Doha Development Agenda ("DDA") negotiations have been broadly successful in reforming the export subsidies scenario, the prevalence of domestic subsidies in several member countries remains a major concern area.[22]

In this context, the present analysis intends to contribute to the literature by exploring the relationship between government financial transfers (i.e., budgetary subsidies) and merchandise exports as a percentage of GDP in a cross-country framework. The aim is to provide some policy recommendations (or at least orientation) which could guide current negotiations for the benefit of all WTO members.

The paper is arranged along the following lines. First, a brief discussion on the research frontier on subsidies and their potential implications on exports is conducted. Secondly, the reflection of this understanding in the regulatory context provided by the WTO's Agreement on Subsidies and Countervailing Measures ("ASCM") is analyzed in its key dimensions. Third, the data sources are explained and macro trends of the principal variables are illustrated. A cross-country empirical analysis is undertaken next for understanding the influence of budgetary subsidies on export inclination. Finally on the basis of the empirical results, a few policy conclusions are drawn.

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WORLD TRADE ORG., *available at* http://www.wto.org/english/docs_e/legal_e/ursum_e.htm#kAgreement (last visited Nov. 16, 2014).

20. *See generally* Debashis Chakraborty, Julien Chaisse & Animesh Kumar, *Doha Round Negotiations on Subsidy and Countervailing Measures: Potential Implications on Trade Flows in Fishery Sector*, 6 ASIAN J. WTO & INT'L HEALTH L. & POL. 201, 201-34 (2011).

21. *See* Ian F. Fergusson, *World Trade Organization Negotiations: The Doha Development Agenda*, CONG. RESEARCH SERV. (2011).

22. *See generally* Alan O. Sykes, *The Economics of WTO Rules on Subsidies and Countervailing Measures*, (U. Chi. L. & Econ., Olin Working Paper No. 186, 2003), *available at* http://www.law.uchicago.edu/files/files/186.aos_.subsidies.pdf (last visited Nov. 16, 2014); *see also* Julien Chaisse & Puneeth Nagaraj, *Changing Lanes: Trade, Investment and Intellectual Property Rights*, 37 HASTINGS INT'L & COMP. L. REV. 223, 223-70 (2014).

## II. UNDERSTANDING THE ECONOMICS OF WTO RULES ON SUBSIDIES

Although subsidies specifically geared towards export promotion contribute more in boosting exports, even domestic subsidies may cause over-production and lead to enhanced exports for releasing the downward pressure on prices in domestic market. The positive relationship between subsidies and exports is observed both in case of agricultural and manufacturing sectors.

### *A. The Agricultural Sector*

Agricultural export subsidies have emerged as a major policy instrument adopted in both developed and developing countries during the General Agreement on Tariffs and Trade ("GATT") period and WTO days. Both agricultural input subsidies (e.g. fertilizer subsidy, irrigation subsidy in terms of free electricity) and output subsidies (e.g. per unit support at higher than market price) may lead to over-production, thereby fueling export opportunities.[23]

Agricultural export subsidies have been extensively used in the U.S. during pre-WTO days. In 1993, the payments under the Export Enhancement Program ("EEP") crossed U.S. $1 billion.[24] The support to U.S. players in terms of export credit arrangements, including deferred interest payments, government guarantees for securing loans at lower interest rates, etc. have also played crucial roles.[25] Similarly in the EU, the primary sector (e.g. dairy and poultry sector) received export subsidies in the order of €1 billion and €650 million in 2008 and 2009 respectively through the Common Agricultural Policy ("CAP").[26] It has been noted that developing countries like Brazil, India, Mexico, South Africa, Thailand, Venezuela, etc. also provide considerable volume of agricultural subsidies.[27]

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23. *See generally* Sacchidananda Mukherjee & Debashis Chakraborty, *Relationship Between Fiscal Subsidies and $CO_2$ Emissions: Evidence from Cross-Country Empirical Estimates*, ECON. RES. INT'L, Vol. 2014 (2014).

24. *See* Howard D. Leathers, *Agricultural Export Subsidies as a Tool of Trade Strategy: Before and After the Federal Agricultural Improvement and Reform Act of 1996*, 83 AM. J. AGRIC. ECON. 209 (2001).

25. *See generally* James Rude, *Reform of Agricultural Export Credit Programs*, 1 ESTEY CTR. J. INT'L L. & TRADE POL. 66 (2000).

26. *See* Dirk Willem te Velde et al., *The EU's Common Agricultural Policy and Development*, 79 OVERSEAS DEV. INST. PROJECT BRIEFINGS 1, 3 (2012).

27. *See* Arvind Panagariya, *Agricultural Liberalisation and the Least Developed Countries: Six Fallacies*, 28 WORLD ECON. 1277, 1285 (2005).

### *B. The Industrial Sector*

The subsidies given to the industrial sector and their implications for exports constitute another major branch of literature. The positive influence of government subsidies in Japan for promotion of progressive industries and exports deserves mention.[28] Apart from the direct subsidies, indirect subsidies like fuel subsidies can significantly lower the variable cost of production in capital-intensive sectors like iron and steel etc., which also provide them substantial edge in the export markets over competitors.[29] Incidence of high volume of fuel subsidies both in developed[30] and emerging countries[31] and their potential export implications has been reported in the literature.

### *C. The Positive Relationship as Classic Analysis*

The literature on the subsidy-export interrelationship in developed countries has generally showed a positive relationship between the two. Agricultural export subsidies have significantly boosted exports from the recipient countries.[32] The evidence of subsidized wheat exports from the U.S. displacing the same from competitor countries deserves mention here.[33] Similarly, the dairy subsidies in both Canada and the U.S. have enhanced their global exports.[34] Empirical estimates for Portugal[35] and

28. *See* David De Meza, *Export Subsidies and High Productivity: Cause or Effect?*, 19 CANADIAN J. ECON. 347, 347 (1986).

29. *See* Peter Thomas in der Heiden, *Chinese Sectoral Industrial Policy Shaping International Trade and Investment Patterns – Evidence from the Iron and Steel Industry*, 18 (Inst. of E. Asian Studies, Univ. of Duisburg-Essen, Working Paper No. 88, 2011), *available at* http://www.uni-due.de/in-east/fileadmin/publications/gruen/paper88.pdf (last visited Nov. 16, 2014).

30. *See* David Victor, *The Politics of Fossil Fuel Subsidies*, GLOBAL SUBSIDIES INITIATIVE 11-13 (2008), *available at* http://www.iisd.org/gsi/sites/default/files/politics_ffs.pdf (last visited Nov. 16, 2014).

31. *See Reforming Energy Subsidies: Opportunities to Contribute to the Climate Change Agenda*, UNITED NATIONS ENV'T PROGRAMME (2008), *available at* http://www.unep.org/pdf/pressreleases/reforming_energy_subsidies.pdf (last visited Nov. 16, 2014).

32. *See* Bernard Hoekman, Francis Ng & Marcelo Olarreaga, *The Impact of Agricultural Support Policies on Developing Countries*, *in* 1 REFORMING AGRICULTURAL TRADE FOR DEVELOPING COUNTRIES: KEY ISSUES FOR A PRO-DEVELOPMENT OUTCOME OF THE DOHA ROUND 100, 100-31 (Alex F. McCalla & John Nash eds., 2007).

33. *See generally* H. G. Brooks, S. Devadoss & W. H. Meyers, *The Impact of the U.S. Wheat Export Enhancement Program on the World Wheat Market*, 38 CANADIAN J. AGRIC. ECON. 253 (1990).

34. *See* Kenneth W. Bailey, *Comparison of the U.S. and Canadian Dairy Industries* (The Pa. State. Univ. Dep't of Agric. Econ. & Rural Soc'y, Staff Paper No. 349, 2002), *available at* http://www.agmrc.org/media/cms/staffpaper349_42eab16a91e4f.pdf (last visited Nov. 16, 2014).

35. *See* Oscar Afonso & Armando Silva, *Non-Scale Endogenous Growth Effects of*

West Germany[36] also confirm the positive relationship between subsidies and exports.

The positive relationship between subsidies and exports has been observed in several developing and emerging countries as well. In South Korea, the implementation of a preferential tax system and subsidy allocation for export activities led to a transformation of the export basket of the country towards more value-added manufacturing products.[37] The massive export growth in China has caused researchers to focus on its subsidy policy as an explanatory variable. The firm-level panel estimation results show that production subsidies facilitate exports, and the effect is more evident for profit-making firms as well as capital-intensive industries.[38] The influence of subsidies on Chinese manufacturing exports has been established under heterogeneous firm structure as well.[39] In addition to macro-level analysis, panel data regressions with Chinese provincial data reveal the strong influence of subsidies on state owned enterprises ("SOEs") exports, as the government financial devolution helps them to overcome the high production costs.[40] In the Malaysian context, the positive long-run relationship between subsidies and exports has been confirmed through a cointegration test.[41] Interestingly, while the positive influence of firm-specific subsidies on exports in Colombia has been observed, the impact is found to be diminishing in subsidy size.[42]

Nevertheless, a section of the literature questions the influence of export subsidies, in particular their quantum, on exports.[43] In the East German context, no relationship between subsidies and exports has been

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*Subsidies for Exporters*, 29 ECON. MODELLING 1248 (2012), *available at* http://www.etsg.org/ETSG2012/Programme/Papers/32.pdf (last visited on Nov. 14, 2014).

36. *See* Sourafel Girma, Holger Görg & Joachim Wagner, *Subsidies and Exports in Germany: First Evidence from Enterprise Panel Data*, 55 APPLIED ECON. Q. 179 (2009).

37. *See* Wontack Hong, *Export-Oriented Growth and Trade Patterns of Korea*, *in* TRADE AND STRUCTURAL CHANGE IN PACIFIC ASIA 273, 273-306 (Colin J. Bradford, Jr. & William H. Branson eds., 1987).

38. *See* Surafel Girma et al., *Can Production Subsidies Explain China's Export Performance? Evidence from Firm-level Data*, 111 SCANDINAVIAN J. ECON. 863 (2009).

39. *See* Fabrice Defever & Alejandro Riaño, *China's Pure Exporter Subsidies* (Ctr. for Econ. Performance, London Sch. of Econ. & Pol. Sci., Working Paper No. 1182, 2012), *available at* http://cep.lse.ac.uk/pubs/download/dp1182.pdf (last visited Nov. 16, 2014).

40. *See generally* Richard S. Eckaus, *China's Exports, Subsidies to State Owned Enterprises and the WTO*, 17 CHINA ECON. REV. 1 (2006).

41. *See* Bakri Abdul Karim & Shazali Abu Mansor, *Subsidy and Export: Malaysian Case*, sec. 4 (Dec. 6, 2011) (unpublished manuscript), *available at* http://mpra.ub.uni-muenchen.de/37025/1/MPRA_paper_37025.pdf (last visited Nov. 16, 2014).

42. *See* Christian Helmers & Natalia Trofimenko, *The Use and Abuse of Export Subsidies: Evidence from Colombia*, 36 WORLD ECON. 465, 481-83 (2013).

43. *See* Girma, Görg & Wagner *supra* note 36, at 2.

established.[44] The weak influence of export subsidies on exports has been confirmed in Turkey[45] and Japan[46] as well. Empirical estimates with respect to U.S. firms have also revealed that the effect of subsidies on exports is not statistically significant.[47] Similarly, the firm-specific analysis on the interrelationship between subsidies and export decisions in Ireland fails to find any significant relationship between the two.[48] Adoption of export subsidies has turned out to be a suboptimal policy instrument in Latin American countries like Argentina, Mexico[49] and Costa Rica as well.[50]

The absence of statistically significant relationship between subsidies and exports in several developing countries and least developed countries ("LDCs") can be explained by the poor implementation performance by the national governments. Kenya had been a prominent example of this phenomenon.[51] The underlying reason of the failure to promote exports even after adopting the subsidization strategy in Bolivia has been accorded to the decision of non-discretionary implementation of the policy. Conversely, Korea and Brazil have succeeded in their attempt by following a path of discretion and selectivity.[52]

## III. EXPLORING THE REFLECTION OF TRADE THEORY PREDICTIONS INTO THE WTO REGULATORY FRAMEWORK

The existing literature notes the possibility of trade diversion from efficient producers due to an export-oriented focus and other forms of subsidies received by their competitors, which may lead to subsidy and

44. *See id.* at 7.

45. *See* Ismail Arslan & Sweder van Wijnbergen, *Export Incentives, Exchange Rate Policy and Export Growth in Turkey*, 75 REV. ECON. & STAT. 128, 132 (1993).

46. *See* Hiroshi Ohashi, *Learning by Doing, Export Subsidies, and Industry Growth: Japanese Steel in the 1950s and 1960s*, 66 INT'L ECON. 297, 319 (2005).

47. *See* Andrew B. Bernard & J. Bradford Jensen, *Why Some Firms Export*, 86 REV. ECON. & STAT. 561, 569 (2004).

48. *See* Holger Görg, Michael Henry & Eric Strobl, *Grant Support and Exporting Activity*, 90 REV. ECON. & STAT. 168, 173 (2008).

49. *See* Julio Nogués, *The Experience of Latin America with Export Subsidies*, 126 REV. WORLD ECON. (WELTWIRTSCHAFTLICHES ARCHIV) 97, 104-05 (1990).

50. *See generally* Alexander Hoffmaister, *The Cost of Export Subsidies: Evidence from Costa Rica*, 39 INT'L MONETARY FUND STAFF PAPERS 1, 138 (1992).

51. *See* Patrick Low, *Export Subsidies and Trade Policy: The Experience of Kenya*, 10 WORLD DEV. 293, 302 (1982).

52. *See* Dani Rodrick, *Taking Trade Policy Seriously: Export Subsidization as a Case Study in Policy Effectiveness*, (Nat'l Bureau of Econ. Research, Working Paper No. 4567, Dec. 1993), *available at* http://www.nber.org/papers/w4567.pdf (last visited Nov. 3, 2014).

countervailing duty wars for reversing that advantage.[53] Such subsidies are specific and different from general payments, such as social security related expenses to which the public at large or large segments of the population are entitled. On one hand, they can improve the returns to domestic producers, but on the other hand, they can distort trade.[54] The additional concern here comes from the fact that the developing country and LDCs firms do not receive the same level of supports received by their developed country counterparts, which significantly constrain their market access both in home and foreign markets.[55] This is reflected in the negotiations and the text of the ASCM.[56] The compromise at the heart of the WTO regulation of subsidies resulted in an agreement which required the WTO Dispute Settlement Body ("DSB") to clarify a number of concepts in the case law. Export subsidies are indeed quite susceptible to abuse.[57]

### *A. The Policy and the Law*

The evolution on subsidy regulation in international trade system started with the Havana Charter, which became the basis for future agreements on subsidies, such as: the GATT, Subsidies Code of the Tokyo Round and the ASCM of the Uruguay Round.[58] The ASCM Agreement defines the term 'subsidy' in detail in Article 1.[59] Moreover, it classifies subsidies into three broad categories: i) prohibited; ii)

53. *See generally* KYLE BAGWELL & ROBERT W. STAIGER, THE ECONOMICS OF THE WORLD TRADING SYSTEM (2002); *see* Renee Sharp & Ussif R. Sumaila, *Quantification of the U.S. Marine Fisheries Subsidies,* 29 N. AMER. J. FISHERIES MGMT. 18 (2009); Anne Tallontire, *Trade Issues on Background Paper: The Impact of Subsidies on Trade in Fisheries Products*, (Food and Agric. Org. of the United Nations, Project Paper No. 26109, July 2004); Donald J. Boudreaux, *Do Subsidies Justify Retaliatory Protectionism?*, 31 ECON. AFF. 4 (2011).

54. The striking example of trade distorting subsidies, the upland cotton subsidies granted by US government for local farmers which had more adverse consequences away from its shores. The efforts of rural farmers in developing countries are being undermined by these subsidies. However, econometric findings have questioned the compensation judgment of WTO in Brazil's favor. For details see Kilungu Nzaku, Matt Vining & Jack E. Houston, *U.S. Cotton Subsidies: Are Brazil's Accusations True?* (presented at S. Agric. Econ. Ass'n Annual Meeting, No. 6749, (2008) *available at* http://ageconsearch.umn.edu/bitstream/6749/2/sp08nz11.pdf (last visited Nov. 16, 2014).

55. *See generally* Erich Supper, *Is There Effectively A Level Playing Field For Developing Country Exports?*, U.N. Sales No. E-00-II-D-22 (2001).

56. *See generally Agreement on Subsidies and Countervailing Measures*, WORLD TRADE ORG., *available at* http://www.wto.org/english/docs_e/legal_e/24-scm.pdf (last visited Nov. 13, 2014).

57. *See* Nogués, *supra* note 49, at 112.

58. *See* Chakraborty, Chaisse & Kumar, *supra* note 20, at 204.

59. *See* Gary N. Horlick & Peggy A. Clarke, *The 1994 WTO Subsidies Agreement*, 17 WORLD COMPETITION 41, 42 (1993).

actionable; and iii) non-actionable subsidies.[60] This categorisation is sometimes referred to as a 'traffic light' approach. Prohibited subsidies are "red light" subsidies, which are harmful to trade per se.[61] Non-actionable subsidies are "green light" subsidies, which are considered to be permitted on the grounds of an explicit reference in the legal text.[62] Lastly, actionable subsidies are "yellow light" subsidies, which are open to be challenged only if they are considered to cause adverse effects on international trade.[63]

In the present ASCM, some uncertainties remain as to the meaning and legal implications of some basic concepts. In this connection, the ASCM architecture has been challenged at times from the perspective of efficiency. The lack of purpose in the agreement itself has come under heavy criticism on the ground that the countries may be forced to remove socially beneficial subsidies as well.[64] In particular, the sensitivity of the agreement with economic considerations is strongly questioned.[65] Questions have also been raised on the optimality of disciplining subsidies beyond the non-violation doctrine.[66] In addition, it is held that WTO's subsidy rules would have yielded greater result only after substantial tariff reductions under GATT.[67]

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60. Hyung-Jin Kim, *Reflections on the Green Light Subsidy for Environmental Purposes*, 33 J. WORLD TRADE 167, 167 (1999).

61. *Id.*

62. *Id.* This category unfortunately was applied only for a period of five years beginning with the entry into force of the WTO, since developing countries were afraid it would be excessively used by industrialized countries. Today efforts are under way to put it back, as the category is important for the promotion of small and medium-sized enterprises ("SMEs") in developing countries as well. *See id.*

63. *Id.* The definition of a subsidy within the meaning of Articles 1 and 3 of the SCM Agreement (prohibited subsidies) was addressed by the Appellate Body in various cases, most prominently in US – Tax Treatment for 'Foreign Sales Corporations' (WT/DS108/AB/R), as well as in Canada - Certain Measures Affecting the Automotive Industry (WT/DS139/AB/R, WT/DS142/AB/R 994). *See Appellate Body Report Canada, Certain Measures Affecting the Automotive Industry*, WT/DS139/AB/R, WT/DS142/AB/R 994 (May 31, 2000), *available at* http://www.wto.org/english/tratop_e/dispu_e/2823d.pdf; *Appellate Body Report, United States – Tax Treatment for "Foreign Sales Corporations"*, WT/DS108/AB/RW (Jan. 14, 2002), *available at* http://www.wto.org/english/tratop_e/dispu_e/108abrw_e.pdf (last visited Nov. 16, 2014).

64. *See* Kyle Bagwell & Robert W. Staiger, *Will International Rules on Subsidies Disrupt the World Trading System?*, 96 AM. ECON. REV. 877 (2006).

65. *See generally* PETROS C. MAVROIDIS, PATRICK A. MESSERLIN & JASPER M. WAUTERS, THE LAW AND ECONOMICS OF CONTINGENT PROTECTION IN THE WTO (Edward Elgar Publ'g 2008).

66. *See generally* Alan O. Sykes, James Kowal & Patricia Kowal, *The Questionable Case for Subsidies Regulation: A Comparative Perspective*, 2 J. LEGAL ANALYSIS 475, 473-523 (2010).

67. *See* David R. DeRemer, *The Evolution of International Subsidy Rules*, (Université

Hence, in recent period international trade governance has been characterised by a progressive regulation on subsidies, tightening disciplines over time in order to avoid such distortions. These rules essentially seek to balance the need for redistribution and implementation of legitimate policy goals and to avoid protectionism and unnecessary distortions of conditions of competition on domestic markets. Trade-restrictive border measures apply to countervail unlawful subsidies but are not at the heart of legal rules relating to this important field of international trade law.

It is argued that the subsidies are often sector-specific and their "narrowly tailored" nature, as well as government legal arrangements pertaining to data dissemination, may prohibit circulation of full information on them in the public domain.[68] The problem gets further compounded in case of the indirect subsidies (i.e., income foregone rather than budgetary transfers). The subsidies data reporting also suffers from a "forum bias", as several countries have reported relatively higher fisheries subsidies figures to the OECD and APEC as compared to the corresponding figures reported to WTO.[69] This kind of massive under-reporting makes 'disciplining' of subsidies through the multilateral negotiations all the more difficult.[70]

### *B. The Practice of Countervailing Duty*[71]

The alleged continuation of subsidies in foreign countries have often led countries to take recourse to trade remedial measures. In order to

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Libre de Bruxelles: ECARES, Working Paper No. 2013-45, 2013), *available at* https://dipot.ulb.ac.be/dspace/bitstream/2013/153041/1/2013-45-DEREMER-theevolution.pdf (last visited Nov. 16, 2014).

68. *Government Subsidies: Revealing the Hidden Budget*, PEW ECON. POL'Y GROUP (2013), *available at* http://www.pewtrusts.org/~/media/legacy/uploadedfiles/pcs_assets/2013/Subsidyscope20Framing20Paperpdf.pdf (last visited Nov. 16, 2014).

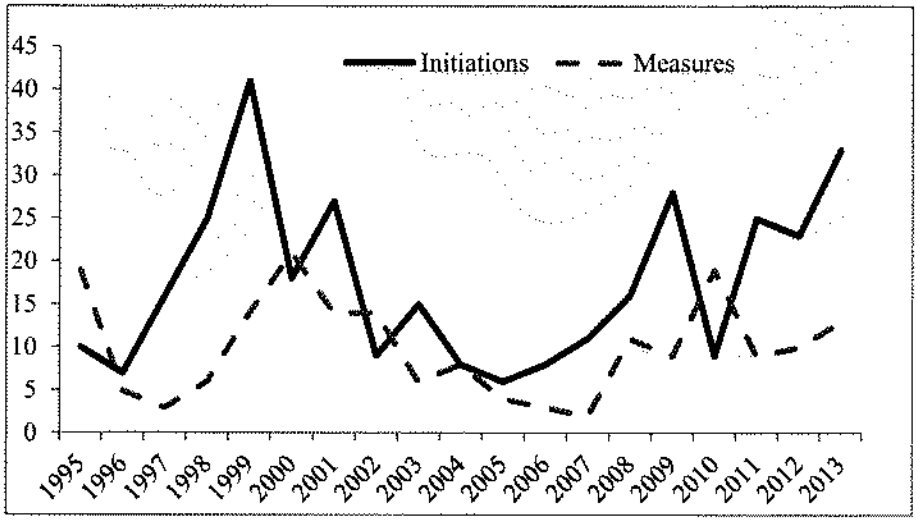
69. *Hard Facts, Hidden Problems: A Review of Current Data on Fishing Subsidies*, WORLD WILDLIFE FUND (2001); *see* Ussif Rashid Sumalia et al., *Catching More Bait: A Bottom-up Re-estimation of Global Fisheries Subsidies*, 12 J. BIOECONOMICS 201, 201-25 (2010).

70. *See Exploring the Links Between Subsidies, Trade and the WTO*, WORLD TRADE ORG. (2006), *available at* http://www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report06_e.pdf (last visited Nov. 16, 2014).

71. The analysis undertaken in this section draws from the methodology developed by Chaisse and Chakraborty (2007) and Chakraborty and Khan (2008). *See* Julien Chaisse & Debashis Chakraborty, *Implementing WTO Rules Through Negotiations and Sanctions: The Role of Trade Policy Review Mechanism and Dispute Settlement System*, 28 U. PA. J. INT'L ECON. L. 153 (2007); *see also* DEBASHIS CHAKRABORTY & AMIR ULLAH KHAN, THE WTO DEADLOCKED: UNDERSTANDING THE DYNAMICS OF INTERNATIONAL TRADE (Los Angeles and London: Sage Publications 2008).

further the analysis, we constructed **Figure 1** in which all countervailing duty investigations initiated from 1995 to 2013 have been reported.

**Figure 1: Countervailing Duty Investigations Initiated from 1995 to 2013 (December), Worldwide**




Source: Constructed by the authors from WTO SCM database

**Figure 1** allows us to observe that the number of global Countervailing Duty ("CVD") initiations and CVD measures in response to subsidies has shown a fluctuating trend during 1995-2013. The number of CVD initiations exhibited a continuous increasing trend from 1996 to 1999 and was at its peak in 1999 with 41 initiations during that year. Since 1999 however a cyclical pattern is being observed. The scenario improved considerably in 2005, when the number of initiations reached a minimum of 6. However, SCM initiations have increased ever since and reached 28 and 25 initiations during 2009 and 2011 respectively. The trend indicates that CVD activism has been influenced strongly by the global recession, with increase in initiation incidence during crisis years. However, the sharp rise in CVD initiations during 2013 indicates grievances among countries, which causes serious concern. The imposition of CVD measures has also shown a similar cyclical pattern. While an increasing trend has been observed in CVD measures during 1996-2000, an overall decreasing trend was noticed during 2001-2007 with minor fluctuations. However, the number of measures increased to 11 in 2008 and further to 19 in 2010. The CVD

measures, like initiations, have also shown an increasing trend during 2013.

In order to understand the SCM imposing behavior of the major trading countries with respect to each other during the period of January 1, 1995 to December 31, 2013, **Table 1** has been constructed from WTO data. While the countries facing the SCM measures are noted row-wise, the countries initiating the same are reported column-wise. A total of 335 SCM actions have been cumulatively initiated during this period. The United States (U.S.) topped the list by accounting for 41.19% of the total CVD initiations, followed by the EU (21.49%). Interestingly, a significant proportion of the initiations made by the U.S. have taken place against major Asian economies like China (28.26%) and India (12.32%). On the other hand, only 15 SCM initiations has been undertaken against the U.S, of which 3 were initiated by Canada and the EU each and 4 by China.

A similar trend has been noticed in case of the EU as well. Among the 72 SCM cases initiated, 27.78% of the total number of cases has been lodged against India. The other countries suffering from the EU SCM initiations include China (11.11%), South Korea (9.72%) and Taiwan (8.33%), where the last two countries are not reported in the table. On the contrary, the EU has faced only 14 initiations on SCM ground against its exports. The lower SCM activism against the EU or U.S. can hardly be considered as evidence signifying lesser devolution of subsidies within their territories.

**Table 1: Subsidy and Countervailing Duty Initiation and Measure Matrix for Major Countries (1.1.95 – 31.12.13)**

| Exporting Country | Reporting Country | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Australia | Brazil | Canada | China P.R. | European Community | India | South Africa | Turkey | United States | Venezuela | Total |
| Argentina | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 (2) | 0 | 8 (4) |
| Brazil | 0 | 0 | 2 (1) | 0 | 0 | 0 | 0 | 2 | 4 (3) | 0 | 7 (8) |
| Canada | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 (3) | 0 | 8 (3) |
| China, P.R. | 1 | 0 | 18 (15) | 0 | 8 (3) | 1 (0) | 1 (0) | 0 | 39 | 0 | 76 (52) |
| European Community | 2 (2) | 0 | 1 (1) | 3 (0) | 0 | 0 | 0 | 0 | (27) | 1 (0) | 14 (11) |
| India | 0 | 5 (2) | 6 (5) | 0 | 20 (15) | 0 | 9 (4) | 1 (1) | 17 (8) | 0 | 61 (34) |
| South Africa | 0 | 1 (0) | 0 | 0 | 1 (0) | 0 | 0 | 0 | 2 (2) | 0 | 7 (4) |
| Turkey | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 (1) | 0 | 4 (1) |
| United States | 0 | 0 | 3 | 4 (3) | 3 (1) | 0 | 0 | 0 | 0 | 0 | 15 (3) |
| Venezuela | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 (0) | 0 | 2 (0) |
| Total | 3 (4) | 6 (7) | 37 (24) | 7 (4) | 72 (33) | 1 (0) | 13 (5) | 1 (1) | 138 (79) | 2 (1) | 335 (190) |

Source: Constructed by the authors from WTO SCM database

* - the figures in the parenthesis show the final measures.

Looking at the other end of the spectrum, it is observed that China presently tops the list of the countries suffering from the SCM initiations (22.69% of the total cumulative initiations), followed by India (18.21%) and South Korea (5.97%) (not shown in Table 1). Canada, the EU and the U.S. jointly initiated 85.53% and 70.49% of all the SCM initiations against China and India respectively. However, other developing countries like South Africa have also targeted Indian exports on SCM grounds. On the whole an interesting picture emerges from the analysis; while Canada, the EU and the U.S. account for 73.73% of all SCM initiations, China, India and South Korea account for 46.87% of the affected cases. If Indonesia and Thailand are also added to the list of the affected developing countries, the corresponding figure reaches 56.12%. Clearly the low cost economies of Asia are emerging as the major targets of SCM activism in leading developed countries.

The SCM measures are reported in the parenthesis of the same table and a similar conclusion emerges from the analysis. The calculations reveal that Canada, the EU and the U.S. jointly account for 71.58% of all SCM measures during the study period. On the other hand, among the target economies, China, India and South Korea account for 50.00% of the total SCM measures.

The finding underlines the need to have a closer analysis of the SCM activism followed by Canada, the EU and the U.S., which is reported at Harmonized System ("HS") sectional level in **Table 2**. Section XV, which consists of Base Metals and articles of Base Metals, is found to attract most of the SCM initiations for these three players. It deserves mention that the sector is the recipient of subsidies in several countries, especially fuel subsidies. The triad has jointly initiated 89.31% of the total SCM initiations and 82.42% of the total measures in this sector. The SCM activism for base metals is particularly high in the U.S. The other major sectors facing SCM challenges in the triad include low-tech products in Section VII (Plastics and articles thereof; Rubber and articles thereof), Section VI (Products of Chemical or allied industries) and Section IV (prepared foodstuff, etc.). However, a relatively sophisticated product group like machinery and electrical appliances (Section XVI) has also been subject to SCM actions. While the EU has adopted several SCM actions on plastic and rubber products and textile products, U.S. actions on chemical products are significant.

**Table 2: Canadian, EU and U.S. Countervailing Initiations / Measures by Product Type – A Comparative Analysis (1.1.95 – 31.12.13)***

| HS Section | Product Description | Canada | EU | US |
|---|---|---|---|---|
| I | Live Animals; Animal Products | 0 | 1 (1) | 4 (1) |
| II | Vegetable Products | 2 (0) | 0 | 3 (1) |
| IV | Prepared Foodstuffs; Beverages, Spirits and Vinegar; Tobacco and Manufactured Tobacco Substitutes | 3 (1) | 0 | 10 (2) |
| V | Mineral Products | 0 | 4 (1) | 4 (4) |
| VI | Products of the Chemical or Allied Industries | 2 (1) | 6 (2) | 14 (6) |
| VII | Plastics and Articles Thereof; Rubber and Articles Thereof | 0 | 16 (8) | 7 (3) |
| X[IX | Wood and Articles of Wood; Wood Charcoal; Cork and Articles of Cork; Manufactures of Straw, of Esparto or of Other Plaiting Materials; Basketware and Wickerwork | 1 (1) | 0 | 4 (2) |
| X | Pulp Of Wood or of Other Fibrous Cellulosic Material; Recovered (Waste and Scrap) Paper or Paperboard; Paper and Paperboard and Articles Thereof | 0 | 1 (1) | 8 (5) |
| XI | Textiles and Textile Articles | 0 | 13 (5) | 2 (2) |
| XII | Footwear, headgear etc. | 0 | 0 (0) | 0 |
| XIII | Articles of Stone, Plaster, Cement, Asbestos, Mica or Similar Materials; Ceramic Products; Glass and Glassware | 0 | 4 (0) | 1 (1) |
| XV | Base Metals and Articles of Base Metal | 28 (20) | 19 (10) | 70 (45) |
| XVI | Machinery and Mechanical Appliances; Electrical Equipment; Parts Thereof; Sound Recorders and Reproducers, Television Image and Sound Recorders and Reproducers; and Parts and Accessories of Such Articles | 1 (1) | 7 (5) | 10 (7) |
| XVII | Vehicles, Aircraft, Vessels and Associated Transport Equipment | 0 | 1 (0) | 1 (0) |

| | | | | |
|---|---|---|---|---|
| Total | | 37 (24) | 72 (33) | 138 (79) |

Source: Constructed by the authors from WTO SCM database

* - the figures in the parenthesis show the final measures.

**Table 3** looks at the other side of the coin, i.e., the distribution of the sectors affected by SCM actions in exporting countries. Six entities, namely, Brazil, China, EU, India, Indonesia and South Korea are considered here for the analysis. China and India have been affected most by SCM actions and in both cases a major proportion of the initiations have been related to Section XV (Base Metal and articles of Base Metal). The other affected sectors include Section VI (Products of Chemical or allied industries) and Section VII (Plastics and articles thereof; Rubber and articles thereof). It is observed from the data that the base metal sector in Brazil, Indonesia and South Korea are also suffering heavily from the SCM initiations and measures in manufacturing products. Interestingly, the EU has faced no SCM initiation or measure against its base metal products, but rather witnessed initiations against its Section III (Animal or Vegetable Fats and Oils) and Section IV (Prepared Foodstuffs) exports. The emerging difference can be explained in line with the subsidy provisions under Common Agricultural Policy ("CAP").

Despite the fact that more than half a century have passed since trading countries started discussions on subsidies issue since the Havana Charter in order to regulate their misuse, there exists ample room for further development. The number of SCM related cases demonstrates that the consequences of granting of subsidies by a government could have serious repercussions on international trade. The DSB of WTO has so far played a significant role in curbing the adverse effects of subsidies on foreign countries. For instance, "successive appeals by the European Union, the United States and other member countries at the WTO has forced China to scrap several export support programs and preferential treatment for its exporters."[72] The proven WTO incompatibility of the U.S. system for taxing foreign export earnings[73] and modifications in Export Credit Guarantee Program for Cotton[74] in light of DSB ruling also

72. *See* Fabrice Defever & Alejandro Riano, *China's Pure Exporter Subsidies*, 1182 CENTRE FOR ECON. PERFORMANCE 1, 5 (2012).

73. *See* Gary Clyde Hufbauer, *The Foreign Sales Corporation Drama: Reaching the Last Act?*, PETERSON INST. FOR INT'L ECON., No. PB02-10 (2002), *available at* http://www.iie.com/publications/pb/pb02-10.pdf (last visited Nov. 16, 2014).

74. *See* John Baffes, *Cotton Subsidies, the WTO, and the 'Cotton Problem'*, 34 WORLD ECON. 1534 (2011).

deserve mention. This scenario demonstrates the necessity to improve the existing regulations on subsidies at the multilateral level.

**Table 3: Countervailing Measures by Product Type – A Comparative Analysis of Major Affected Countries (1.1.95 – 31.12.13)**

| Hs Section | Product Description | Brazil | China | EU | India | Indonesia | South Korea |
|---|---|---|---|---|---|---|---|
| I | Live Animals; Animal Products | 0 | 0 | 1 (1) | 0 | 0 | 0 |
| II | Vegetable Products | 0 | 0 | 2 (2) | 0 | 0 (1) | 0 |
| III | Animal or Vegetable Fats and Oils and Their Cleavage Products etc.; Animal or Vegetable Waxes | 0 | 0 | 3 (3) | 0 | 0 | 0 |
| IV | Prepared Foodstuffs; Beverages, Spirits and Vinegar; Tobacco and Manufactured Tobacco Substitutes | 0 | 1 (0) | 7 (5) | 1 (0) | 1 (0) | 0 |
| V | Mineral Products | 0 | 0 | 0 | 0 | 1 (0) | 0 |
| VI | Products of the Chemical or Allied Industries | 0 | 9 (5) | 1(0) | 13 (6) | 1 (0) | 0 |
| VII | Plastics and Articles Thereof; Rubber and Articles Thereof | 0 | 1 (1) | 0 | 11 (6) | 2 (0) | 1 (0) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| XIX | Wood and Articles of Wood; Wood Charcoal; Cork and Articles of Cork; Manufactures of Straw, of Esparto or of Other Plaiting Materials; Basketware and Wickerwork | 0 | 3 (2) | 0 | 0 | 0 | 0 |
| X | Pulp Of Wood or of Other Fibrous Cellulosic Material; Paper or Paperboard; Paper and Paperboard and Articles Thereof | 0 | 5 (3) | 0 | 1 (1) | 4 (2) | 1 (0) |
| XI | Textiles and Textile Articles | 0 | 3 (2) | 0 | 5 (2) | 4 (1) | 2 (0) |
| XII | Footwear, headgear etc. | 0 | 0 | 0 | 1 (0) | | 0 |
| XIII | Articles of Stone, Plaster, Cement, Asbestos, Mica or Similar Materials; Ceramic Products; Glass and Glassware | 0 | 3 (1) | 0 | 0 | | 0 |
| XV | Base Metals and Articles of Base Metal | 6 (8) | 40 (30) | 0 | 23 (17) | 5 (4) | 9 (4) |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| XVI | Machinery and Mechanical Appliances; Electrical Equipment; Parts Thereof; Sound Recorders and Reproducers etc. | 1 (0) | 8 (7) | 0 | 6 (2) | 0 | 7 (5) |
| XVII | Vehicles, Aircraft, Vessels and Associated Transport Equipment | | 3 (1) | | | | |
| Total | | 7 (8) | 76 (52) | 14 (11) | 61 (34) | 18 (8) | 20 (9) |

Source: Constructed by the authors from WTO SCM database

* - the figures in the parenthesis show the final measures.

## IV. REJUVENATING THE ANALYTICAL FRAMEWORK

The influence of government subsidies on export performance is estimated here for 140 countries over 1990-2011. Subsidies included in the present analysis include only direct budgetary transfers reported by the government of a country. The indirect or implicit subsidies (i.e., income foregone in terms of tax rebate, fuel subsidy etc.) are not included in the analysis due to non-availability of consistent cross-country data. The current analysis considers subsidies provided by a country expressed as percentage of its GDP for ensuring comparability of data across countries, which is accessed from Government Finance Statistics ("GFS") of IMF.[75]

### *A. The Economic Data*

As per the GFS Manual of 2001, the IMF reported data on subsidies are:

> [C]urrent transfers that government units pay to enterprises either on

75. *See generally Government Finance Statistics*, IMF ELIBRARY- DATA (2013), *available at* http://elibrary-data.imf.org/DataExplorer.aspx (last visited Nov. 16, 2014).

> the basis of the levels of their production activities or on the basis of the quantities or values of the goods or services that they produce, sell, or import. Included are transfers to public corporations and other enterprises that are intended to compensate for operating losses.[76]

Clearly, such subsidies can include actionable transfers and may significantly influence exports. Moreover, even de-linked subsidies, which are provided solely based on domestic considerations, rather than external motivations, may end up providing export boost through indirect effects.

It is observed that GFS compiles the government subsidy figures for countries from different government sources as per their reporting practice.[77] Three types of government reporting have been observed in the GFS data.[78] First, the *General Government* ("GG") includes all the Central Government ("CG") transfers plus budgetary expenses of all the Central Ministries / Departments and the same for the State Governments ("SG") (including provincial or regional) and Local Governments.[79] The *Central Government* ("CG") transfers on the other hand represent the consolidated transfers of the Central Government (including transfers of Central Ministries / departments).[80] Finally, subsidies reported under *Budgetary Central Government* ("BCG") covers, "[a]ny central government entity that is fully covered by the central government budget."[81] In addition, the GFS generally reports the budgetary statistics for countries adopting cash accounting standards, but for several countries, accrual (non-cash) accounting standards for extra-budgetary units and social security funds has been reported. In order to understand the differential effects of the data reporting differences, suitable dummy variables have been included in the empirical model.

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76*Government Finance Statistics Manual*, IMF 40 (2001), *available at* https://www.imf.org/external/pubs/ft/gfs/manual/pdf/all.pdf (last visited Nov. 16, 2014).

77. *See Government Finance Statistics Manual 2001 - Companion Material: Instructions for Compiling the Institutional Table*, IMF (2005), *available at* http://www.imf.org/external/pubs/ft/gfs/manual/intbin.pdf (last visited Nov. 16, 2014); *see generally Government Finance Statistics, supra* note 75.

78. *See Government Finance Statistics Manual 2001 - Companion Material: Instructions for Compiling the Institutional Table, supra* note 77, at 4; *see generally Government Finance Statistics, supra* note 75.

79. *See Government Finance Statistics Manual 2001 - Companion Material: Instructions for Compiling the Institutional Table, supra* note 77, at 4; *see generally Government Finance Statistics, supra* note 75.

80. *See Government Finance Statistics Manual 2001 - Companion Material: Instructions for Compiling the Institutional Table, supra* note 77, at 4; *see generally Government Finance Statistics, supra* note 75.

81. *Government Finance Statistics Manual 2001 - Companion Material: Instructions for Compiling the Institutional Table, supra* note 77, at 4.

Several control variables, e.g., the per capita income of the countries, the share of agriculture, industry and services in their economies, merchandise imports, inward foreign direct investment ("FDI") stock and political freedom, are included in the analysis in line with existing literature. With the growing size of the economy, the relative importance of trade is expected to decrease. Furthermore, the contribution of various sectors to GDP may show interesting dynamics with exports in the presence of subsidies in the model. Inward FDI stock is generally favorable for enhancing exports from the recipient country.[82] In addition, merchandise imports (both raw materials and semi-processed products) can boost exports of a country.[83] Finally, political freedom leads to economic efficiency, which in turn may enhance exports.[84]

Gross GDP figures in current prices and current exchange rates are obtained from the United Nations Conference on Trade and Development ("UNCTAD") Statistics. Merchandise exports and imports in a country are considered in the current analysis by expressing them as a percentage of its GDP, where all variables (at level) are measured in U.S. Dollars at current prices and current exchange rates in millions. The same data is accessed from UNCTAD Statistics as well.[85] The share of the three sectors in GDP of a country has been obtained from World Development Indicators ("WDI") database of the World Bank.[86] The data on political freedom is obtained from Freedom House, where the country scores range over 1 to 7 (where 1 represents the highest and 7 the lowest level of freedom).[87]

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82. *See* Tadashi Ito, *Export Platform Foreign Direct Investment: Theory and Evidence*, 378 INST. DEVELOPING ECON. 4 (Dec. 2012).

83. *See* Tahir Mukhtar & Sarwat Rasheed, *Testing Long Run Relationship Between Exports and Imports: Evidence from Pakistan*, 31 J. ECON. COOPERATION & DEV. 41, 41-42 (2010); *see generally* Biswajit Ng & Jaydeep Mukherjee, *The Sustainability of Trade Deficits in the Presence of Endogenous Structural Breaks: Evidence from the Indian Economy*, 23 J. ASIAN ECON. 519, 519-26 (2012); *see generally* Ramona Dumitru et al., *Analysis of the Relationship between the Romanian Exports and Imports*, 8 ANNALS UNIV. PETROSANI – ECON. 177, 177-82 (2008).

84. *See* Andre Liebenberg, *The Relationship Between Economic Freedom, Political Freedom and Economic Growth* (Nov. 7, 2012) (M.B.A. thesis, Gordon Inst. of Bus. Science, Univ. of Pretoria), *available at* http://upetd.up.ac.za/thesis/available/etd-02232013-123734/unrestricted/dissertation.pdf (last visited Nov. 16, 2014).

85. *See generally* UNITED NATIONS CONFERENCE ON TRADE & DEV., *available at* http://unctadstat.unctad.org/ReportFolders/reportFolders.aspx (last visited Nov. 16, 2014) (to access data used).

86. *See generally World Development Indicators*, WORLD BANK, *available at* http://databank.worldbank.org/databank/download/WDIandGDF_excel.zip (last visited Nov. 16, 2014).

87. The country scores can be accessed using Freedom House's Index of Democracy. *See Freedom in the World*, FREEDOM HOUSE (2014), *available at*

In addition, the analysis incorporates a number of constructed dummy variables (e.g. country type dummies, financial system reporting dummies, a dummy for the year 1999 and the year dummies) to capture their effects on the proposed relationship. However, to avoid perfect multicollinearity, only any two of the government dummies (GG, CG and BCG) have been simultaneously used at a time in the estimated models. Similarly, cash and non-cash dummies have not been used in the regression models together. To understand the export implications of subsidies in countries situated at different levels of economic achievements, four country group dummies are considered separately in the model on the basis of Per Capita Gross National Income ("PCGNI", atlas method, in current U.S. dollars). The four country groups are as follows: low-income economies ("LIE") (PCGNI: US $1,005 or less), lower-middle-income economies ("LMIE") (PCGNI: US $1,006-3,975), upper-middle-income economies ("UMIE") (PCGNI US $3,976-12,275) and high-income economies ("HIE") (PCGNI US $12,276 or more).[88] To avoid perfect multicollinearity, UMIE was dropped from the analysis.

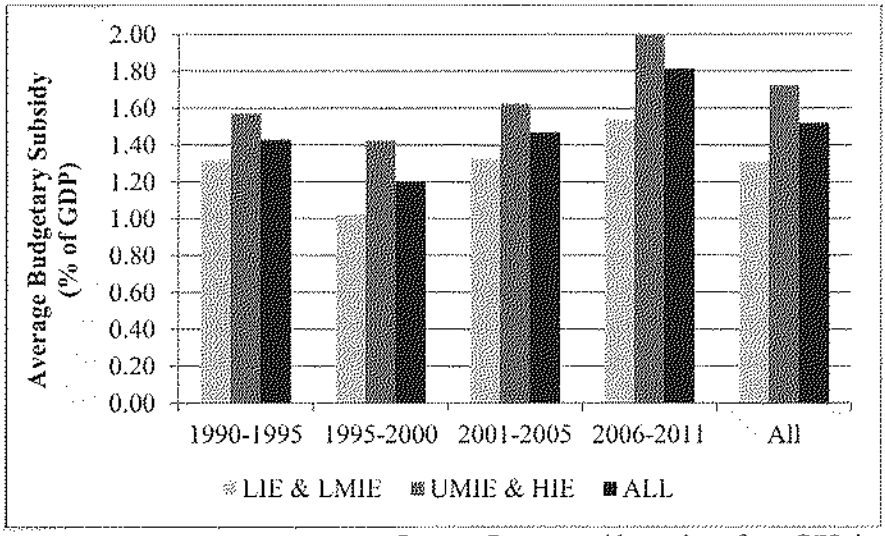
### *B. The Macro Trends*

The macro scenario in the two key series considered in the current analysis, namely, budgetary subsidies and merchandise exports, are illustrated with the help of **Figures 2-4**. The time period is divided into four equal segments for understanding the temporal perspective. It is observed from **Figure 2** that the average allocation of budgetary subsidies (expressed as percentage of GDP) has understandably been higher in UMIE and HIE countries as compared to their LIE and LMIE counterparts during all four periods reported in the diagram. The average subsidy figure in 1995-2000 declined vis-à-vis the corresponding 1990-1995 figures, but the same increased both during 2001-2005 and 2006-2011 as compared to the preceding periods. In addition, the gap between the two groups of economies has widened during 2006-11.

http://www.freedomhouse.org/report-types/freedom-world#.VDr7OmRdWi2 (last visited Nov. 16, 2014).

88. Income brackets are in line with the World Bank classification. *See Data-Countries and Economies*, WORLD BANK (2014), *available at* http://data.worldbank.org/country (last visited Nov. 16, 2014).

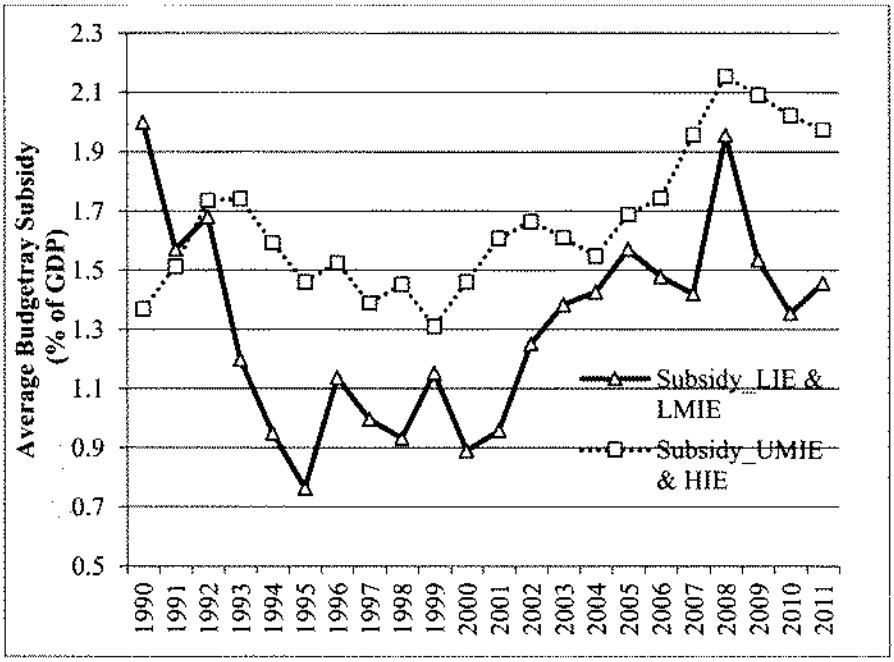
**Figure 2: Subsidy Scenario in Countries Under Different Income Group**




Source: Constructed by authors from GFS data

An annual time trend reported in **Figure 3** reveals that from 1999 onwards, the average subsidy devolution in proportional terms has intensified in the developed countries (HIE and UMIE). A similar upward trend is noted in their relatively poorer counterparts (LIE and LMIE) from 2000 onwards. The trend line drawn for both series (not shown in figure) reveals a clear upward trend from 1999 onwards, as a result of which a 1999 year dummy (1 for year 1999 onwards, 0 for others) has been incorporated in the regression models. Another important observation from the figure is that for both developed and developing countries alike, budgetary transfers (as % of GDP) increased in the face of recession (2008). Though the size of the bailout package was larger for developed countries, increase in budgetary transfers for developing countries also increased substantially. Nevertheless, given budgetary constraints, the withdrawal of special package for recession was faster for developing countries from 2009 onwards.

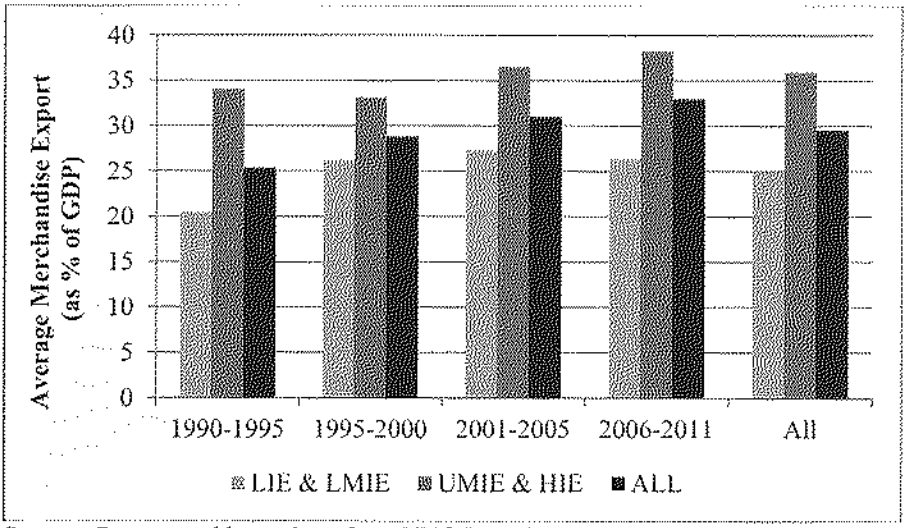
**Figure 3: Time Trend in Subsidy Figures Across Country Groups by Income**




Source: Constructed by authors from GFS data

**Figure 4** reveals the average merchandise export scenario (expressed as percentage of GDP) for the two groups of countries. The exports have increased for UMIE and HIEs for all the four periods. However, there has been a marginal decline in proportional importance of exports for LIE and LMIEs during the last period, 2006-2011. The proportional importance of exports in GDP has been higher in UMIE and HIEs as compared to their LIE and LMIE counterparts during all four periods reported in the diagram.

**Figure 4: Merchandise Export Scenario in Countries Under Different Income Group**




Source: Constructed by authors from UNCTAD data

Finally, **Table 4** illustrates the data availability for the present analysis as per the government data reporting practices (i.e., GG, CG or BCG). The first three columns segregate the total observations as per the cash and non-cash (accrual) reporting practices, while the next three columns summarize the average subsidy scenario (as percentage of GDP) as per the country groupings. The last three columns represent the average export figures expressed as percentage of GDP. It is observed that the subsidies and export inclination figures are generally higher for countries reporting GG data as compared to corresponding ones following CG and BCG reporting practices, barring the exception of UMIE and HIE countries in case of BCG data on average subsidy.

**Table 4: Description of Data by Availability**

| | Data reporting Types (Number of Observations) | | | Average Subsidy (% of GDP): 1990-2011 | | | Average Merchandise Export (% of GDP): 1990-2011 | | |
|---|---|---|---|---|---|---|---|---|---|
| Level of Government | Cash | Non-cash | Total | LIE & LMIE | UMIE & HIE | All | LIE & LMIE | UMIE & HIE | All |
| General Government | 309 | 554 | 863 | 1.68 | 1.64 | 1.65 | 28.35 | 36.01 | 33.85 |
| Central Government | 659 | 37 | 696 | 1.28 | 1.56 | 1.40 | 26.94 | 34.04 | 30.00 |
| Budgetary Central Government | 508 | 102 | 610 | 1.12 | 2.28 | 1.47 | 22.85 | 33.59 | 26.13 |
| All | 1476 | 693 | 2169 | 1.31 | 1.73 | 1.52 | 24.88 | 34.72 | 29.10 |

Source: prepared by the authors from the constructed dataset

## V. RUNNING THE EMPIRICAL TESTS

Currently, the WTO member countries are engaged in multilateral negotiation so as to limit the usage of actionable subsidies in international trade, which needs to draw from empirical findings on this front. A cross-country empirical analysis is undertaken next for understanding the influence of budgetary subsidies on export inclination. First, the regression model is explained, while the empirical results are subsequently presented.

### *A. Empirical Model for the Cross-Country Empirical Analysis*

The following panel data regression model is estimated here in order to analyze the effect of subsidies on export performance. The advantage of using the log-linear model in the current context is that the estimated coefficients can be interpreted as the elasticity between budgetary subsidy and exports.

$$LMERX_{it} = \alpha + \beta_1 LPCGDP_{it} + \beta_2 LPCGDP_{it}^2 + \beta_3 LSUBSIDY_{it} + \beta_4 LMERM_{it} + \beta_5 LGDPIND_{it} + \beta_6 LGDPSER_{it} + \beta_7 LGDPAGRI_{it} + \beta_8 LFDIINSTK_{it} + \beta_9 LFHIPR_{it} + GOVDUM + Non\text{-}Cash + Dum1999 + T_t + \varepsilon_{it} \ldots\ldots\ldots\ldots (1)$$

where,

| | |
|---|---|
| $\alpha$ | represents the constant term |
| βs | *are coefficients* |
| $LMERX_{it}$ | represents log of Merchandise Export (expressed as percentage of GDP) of country *i* for year *t* |
| $LPCGDP_{it}$ | represents log of Per Capita Gross Domestic Product (PPP, current international $) of country *i* for year *t* |
| $LSUBSIDY_{it}$ | represents log of budgetary subsidy (as percentage of GDP) of country *i* for year *t* |
| $LMERM_{it}$ | represents the log of Merchandise Import (expressed as percentage of GDP) of country *i* for year *t* |
| $LGDPIND_{it}$ | represents the log of share of industry in GDP (expressed as percentage of GDP) of country *i* for year *t* |
| $LGDPSER_{it}$ | represents the log of share of services in GDP (expressed as percentage of GDP) of country *i* for year *t* |
| $LGDPAGRI_{it}$ | represents the log of share of agriculture and allied activities in GDP (expressed as percentage of GDP) of country *i* for year *t* |
| $LFDIINSTK_{it}$ | represents the log of inward stock of Foreign Direct Investment (expressed as percentage of GDP) of country *i* for year *t* |
| $LFHIPR_{it}$ | represents the log of Freedom House Index of Political Rights of country *i* for year *t* |
| *GOVDUM* | represents government dummy, of which<br>*GG* represents a dummy for countries, when the subsidy data is reported by the general government<br>*CG* represents a dummy for countries, when the subsidy data is reported by the central government<br>*BCG* represents a dummy for countries, when the subsidy data is reported by the budgetary central government |
| Cash | represents a dummy when countries practice cash accounting standards for budgetary reporting |
| Non-Cash | represents a dummy when countries practice accrual accounting standards for budgetary reporting |

| | |
|---|---|
| *Dum1999* | is a dummy whose value is 0 before 1999 and 1 for 1999 onwards |
| $T_t$ | represents the time dummies (i.e., $T_1$=1 for 1990 and 0 otherwise) |
| $\varepsilon_{it}$ | represents the disturbance term |

*B. Results*

A panel data regression analysis has been undertaken here with help of the STATA software (version 10.1). To understand the working of the model for the proposed relationship in equation (1), a Hausman specification test is first conducted. It is observed that the Chi-square test statistic of 125.13 (Prob>chi2: 0.0000) is statistically significant. The Hausman test suggests the presence of a fixed effect model. Next, we have conducted a Wooldridge test for autocorrelation in panel data and the test statistics is 78.815 (Prob>F: 0.0000), which implies the presence of autocorrelation of first order. A Breusch-Pagan / Cook-Weisberg test is conducted next and the test statistic is 109.67 (Prob>chi2: 0.0000), which points to the presence of heteroskedasticity. The mean Variation Inflation Factor ("VIF") is 2.88, which indicates that the variables included in the model are within the tolerance level of multicollinearity. Based on these diagnostics, the present analysis estimates Feasible Generalized Least Square ("FGLS") regressions with time and country group fixed effects and reports results for equation (1) with heteroskedasticity and first order autocorrelation [AR(1)] corrected coefficients and standard errors in **Table 5**.

The estimation results summarized in **Table 5** clearly indicate the positive influence of government subsidies on export performance across country groups. In both the Fixed Effect ("FE") and FGLS regression models, the coefficient of logarithmic transformation of subsidies is observed to be positive and significant.

The results indicate that in both lower and higher income countries, the devolution of subsidies are helping them to promote exports, in line with the theoretical predictions. The LIE, LMIE and HIE dummies included in most of the regression models are all found to be positive and significant, implying that all countries, irrespective of their income levels, benefit from the provision of subsidies. Interestingly, the coefficient for the LIE dummy is found to be non-significant in the fixed effect model, but larger as compared to the corresponding figures for LMIE and HIE country group dummies under the FGLS models. In addition, the coefficients of the LMIE dummies are found to be larger than the HIE dummies. In other words, greater devolution of subsidies in lower

income group countries leads to greater export growth. The result can be explained by the structural (e.g., poorer infrastructure, imperfect factor markets) and operational bottlenecks (e.g., lower margins, scale disadvantages) prevalent in LDCs and other poorer economies, and greater devolution of budgetary support can overcome these constraints and effectively promote exports from their territories. However, the dummies are found to be statistically non-significant under some model specifications.

**Table 5: Estimation Results on the Relationship Between Subsidy and Merchandise Exports**

| Independent Variables | Dependent Variable: LMERX | | | | |
|---|---|---|---|---|---|
| | *Fixed Effect* | *Feasible Generalized Least Square (FGLS)* | | | |
| | *Model 1* | *Model 2* | *Model 3* | *Model 4* | *Model 5* |
| *Constant* | 1.4188** | 0.8255 | 2.1654*** | 0.6785 | 0.7779 |
| | (0.5793) | (0.6103) | (0.7556) | (0.6282) | (0.6634) |
| *lpcgdp* | -0.1894*** | -0.5537*** | -0.3933** | -0.8073*** | -0.518*** |
| | (0.0514) | (0.1478) | (0.1753) | (0.1456) | (0.1593) |
| *lpcgdp2* | | 0.0395*** | 0.0303*** | 0.0509*** | 0.0374*** |
| | | (0.0082) | (0.0096) | (0.0083) | (0.0088) |
| *lsubsidy* | 0.0173*** | 0.0069* | 0.0093** | 0.0067* | 0.0088** |
| | (0.0048) | (0.0036) | (0.0039) | (0.0037) | (0.0037) |
| *lmerm* | 0.6772*** | 0.7222*** | 0.7163*** | 0.7036*** | 0.6768*** |
| | (0.0304) | (0.0159) | (0.017) | (0.0168) | (0.0174) |
| *lgdpind* | 0.5435*** | 0.7816*** | 0.5601*** | 0.9097*** | 0.7859*** |
| | (0.0575) | (0.0425) | (0.0534) | (0.0315) | (0.0457) |
| *lgdpser* | -0.2284*** | -0.2913*** | -0.5681*** | | -0.284*** |
| | (0.076) | (0.0609) | (0.0778) | | (0.0636) |
| *lgdpagri* | | | | -0.025 | |
| | | | | (0.0156) | |
| *lbdistk* | 0.0208** | 0.0436*** | 0.0262*** | 0.0367*** | 0.0415*** |
| | (0.0092) | (0.0062) | (0.0051) | (0.0061) | (0.0064) |
| *Uhipc* | | | | | 0.0105 |
| | | | | | (0.0139) |

| | | | | | |
|---|---|---|---|---|---|
| *cg* | -0.0692*** | 0.0201 | 0.0132 | 0.0182 | 0.0188 |
| | (0.0212) | (0.0138) | (0.0137) | (0.0149) | (0.0139) |
| *lcog* | -0.0529* | -0.0293 | -0.0074 | -0.0105 | -0.0196 |
| | (0.0287) | (0.0192) | (0.0189) | (0.0197) | (0.0193) |
| *noncash* | 0.0182 | 0.0363** | 0.0246* | 0.0312** | 0.027* |
| | (0.0214) | (0.0146) | (0.0142) | (0.0153) | (0.0148) |
| *lic* | 0.0021 | 0.0765*** | 0.0429 | 0.0691** | 0.0639** |
| | (0.0407) | (0.0295) | (0.0332) | (0.0309) | (0.0302) |
| *lmic* | 0.0611*** | 0.0451*** | 0.0418** | 0.0449*** | 0.0445*** |
| | (0.0233) | (0.0157) | (0.0164) | (0.0171) | (0.0158) |
| *hic* | 0.0472* | 0.0352* | 0.0139 | 0.023 | 0.0272 |
| | (0.0259) | (0.019) | (0.0181) | (0.0187) | (0.019) |
| *dum1999* | 0.1102*** | 0.0638*** | 0.0598*** | 0.064*** | 0.0763*** |
| | (0.0397) | (0.0227) | (0.0223) | (0.0244) | (0.0242) |
| *Time Effects* | Yes | Yes | Yes | Yes | Yes |
| | | | | | |
| *No. of Obs* | 1792 | 1788 | 1573 | 1773 | 1764 |
| *No. of Grs* | 139 | 135 | 120 | 134 | 133 |
| *Wald Chi2* | 44.67# | 4846.05 | 3517.11 | 4194.69 | 3807.22 |
| *Prob (Wald chi2)* | 0.0000@ | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

Notes: # - implies F-Stat (instead of Wald chi2 for Model 1)

@ - implies Prob (F-Stat) (instead of Prob (Wald chi2) for Model1)

Figure in the parenthesis shows the heteroskedasticity and first order autocorrelation [AR(1)] corrected standard error of the estimated coefficient

***, ** and * implies estimated coefficient is significant at 0.01, 0.05 and 0.10 level respectively.

Among the control variables, log of per capita GDP of a country is found to be negatively related with log of export inclination, while the square term is positively significant. The result implies that the growth rate of exports declines with rise in growth rate of GDP, which is higher for the low income countries starting from a lower base. The result is in line with the coefficient of country dummies and clearly signifies that higher economic size is more favorable for outward orientation. Log of

merchandise import ("LMERM") bears a positive coefficient with the dependent variable, indicating that higher merchandise import growth rate leads to higher merchandise exports. The relationship can be explained by the fact that deeper association with integrated production networks with trade partners lead to higher import of quality raw material and semi-processed inputs, which contributes to the rise in value-added final exports.

The independent variable GDPIND is positively related with export inclination, as generation of greater manufacturing (including mining, construction, electricity, water supply and gas) output leads to higher export surplus. Share of agriculture is, however, not significant in any of the regression models. As per expectation, FDI inward stock variable is positively related to export inclination, signifying presence of "export-platform" FDI in the cross-country framework. Finally, political freedom variable is found to be non-significant, owing to the fact that both countries characterized by deeper democratic practices (e.g. U.S.) and more stringent regimes (e.g. China) demonstrate higher export inclination.

Capturing the influence of the level of government that provides budgetary subsidy for a particular country is important. Following the GFS reporting principle, in absence of information on GG budgetary subsidy for a country, the current analysis considers CG or BCG in the estimated model. It is observed that in all reported models the coefficient of both CG and BCG bear a negative sign. The result strongly underlines the significance of the reported layer of government subsidies on exports, as CG and BCG subsidies are associated with differential intercept shifts. The dummies represent the information at a more disaggregated level of government, which are associated with lesser export inclination. The coefficient of the non-cash dummy is found to be positive in sign. The result underlines the importance of the accounting system and implies that adoption of accrual accounting across the countries is desirable. The coefficients of both the set of support category dummies strongly indicate that the layer of government data reporting system and their accounting technique considerably influence the relationship. The 1999 dummy has been found to be positive and significant, indicating that subsidy-export relationship received a boost in the post 1999 period.[89] Finally, the reported coefficients of the time dummies are also significant.

89. It may be noted that the year 1999 has been marked by the failure of the Seattle Ministerial meeting of the WTO.

## VI. CONCLUDING REMARKS: LESSONS FOR THE CURRENT WTO NEGOTIATIONS

The waves of globalization during the last decade have led to deepening of international trade flows in general and in manufacturing products in particular.[90] On one hand, the evolving trade dynamics have created an urge in developing countries and LDCs to enable the domestic players to enjoy a level-playing field in the international markets and also to actively attract production-related foreign investment. Provision of subsidies for augmenting advantages for local players has played a crucial role in this context. On the other hand, declining competitiveness has forced their developed counterparts to contemplate continuation of subsidy policies within their territories. In addition to the direct export subsidies, the indirect subsidies may also positively influence export pattern. The empirically observed subsidy-exports interrelationship in the current analysis needs to be viewed in this wider context.

Firstly, the number of cases in international trade practice demonstrated that the consequences of granting of subsidies by a government could have serious adverse effects on international trade. This situation strongly underlines the necessity to improve the regulation on subsidies at the multilateral level. Despite the fact that more than half a century passed since trading countries started negotiations on subsidies issues, it seems international trade law still have room for further development. The discussion of the completed disputes on ASCM indicates that several major provisions of the agreement have been liberally misused by WTO members by targeting low-cost Asian countries. As a result, the CVD activism effect has been felt more seriously by the middle income developing countries and the emerging economies, who have also witnessed an increasing share of manufacturing sector in their respective GDP. Therefore, the current negotiation on rules should attempt to prevent such misuse through relevant modification of the ASCM text.

In particular, the data reporting practices across countries differ widely, often providing some economies with the flexibility to hide the quantum of subsidies devolution to the local players. The negotiation on fisheries subsidies is a case in point, where such data reporting practices mismatch largely contributes to the delay in curbing the 'Article 1' subsidies. Hence, the subsidies data reporting framework of countries needs to be harmonized. The empirical observations of the current

90. *See* Julien Chaisse, *'Exploring the Confines of International Investment and Domestic Health Protections'*, 39 AM. J. L. AND MED. 332, 332-361 (2013).

analysis, underlining the importance of data reporting framework in determining the 'export-effect' of the subsidies, is of crucial policy relevance in that context.

Secondly, supporting the domestic players through subsidy policy has been a traditional policy tool adopted by both developed and developing countries. The developed countries, with their greater financial strength, has enabled the local players to have an edge *vis-à-vis* the foreign players, not only in the domestic market, but also in the third markets. Such policies have been practiced in Australia, Canada, the EU and the U.S., i.e., the Quad countries, for a long time. These developments have motivated several developing and emerging countries since the 1970s onward to mimic the subsidy-led export success of their developed counterparts. The empirical results indicate a successful adoption of the subsidy-led export growth policy in both lower-income and lower-middle income economies as well.

The empirical results underline that continuing subsidies makes economic sense from the selfish standpoint of an individual country, irrespective of its development status. However, given the economic discrepancy between developed and developing country exports, a subsidy-based trade war is more likely to put the latter group in a disadvantageous position *vis-à-vis* their developed counterparts. In particular, continuation of subsidy policies in developing countries and LDCs end up only providing moral justification for the higher SCM activism in their developed counterparts. The evidence presented from the base metal sector is a case in point. Moreover, provision of subsidies create diverging influence on exports of countries belonging to different income groups, as evident from the significance of the country group dummy coefficients, adds further to the disadvantages of the poorer economies. The empirical findings of the current paper therefore underline the importance of concluding the Doha Round Negotiations of WTO in general and disciplining subsidies in particular in no uncertain terms.

"The third major issue that has caused political turmoil in the negotiations surrounding the Doha Agreement and the post Uruguay round of talks at the WTO is in the area of export refunds and subsidies. At Bali, the ministers agreed to ensure export subsidies and other measures with similar effect are [reduced]."[91] "With no legally binding

91. *World Trade Organisation Truly Delivers*, *supra* note 3; *see also Ministerial Conference of 7 December 2013*, WT/MIN(13)/40-WT/L/915 (2013), WORLD TRADE ORG., *available at* http://wto.org/english/thewto_e/minist_e/mc9_e/balipackage_e.htm (last visited Nov. 16, 2014).

arrangements, the good will statements are open to abuse and the disputes' panel of the [WTO] could be just as busy as it has been with countries arguing over subsidies and tariffs and quotas as much as they have over the last [two decades]."[92] "The fact that the U.S. has opted out of the tariff quota arrangements also forewarns of arguments and trouble and it appears that the current trend for bilateral negotiations for free trade agreements will be the route forward and the work in the WTO."[93]

92. *World Trade Organisation Truly Delivers*, *supra* note 3.
93. *Id.*