

Potential economic effects of TTIP for the Netherlands

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- Negotiations on the Trans-Atlantic Trade and Investment Partnership (TTIP) started in the summer of 2013
- US and EU economies account for roughly half of world output and world trade: the scope and international impact of TTIP is considerable
- However, negotiations are still ongoing, although politically stalled (due to Brexit, CETA, US elections)
- Trade policy has become a public topic and thus, more informed research is needed
- Current global trade slowdown can be partially explained by increase in protectionism (IMF, 2016).
- Trade is a very important growth mechanism, specially for small open economies (The Netherlands)

Overview of presentation

- What is TTIP?
- Main research question: What are the expected economic outcomes of TTIP for the Netherlands?
- Survey on economic studies of TTIP (CGE- and gravity-based models)
- We evaluate the potential economic impact using a CGE model
 - Overview of WorldScan (in-house CGE model from CPB)
 - Estimate (plausible) trade cost reductions associated with TTIP (tariffs and NTBs)
 - Include this "shock" in a CGE model to evaluate the trade and overall macroeconomic impact
 - Presentation of main results
- Summary of economic effects
- Legal and political topics associated with TTIP

What is TTIP?

- TTIP is a comprehensive preferential trade agreement, also called "deep" or "next generation" PTA (such as TPP and CETA)
- Three main pillars:
 - ① Tariff elimination (traditional PTA domain)
 - ② Regulatory cooperation to reduce non-tariff barriers (NTBs)
 - ③ Other behind the border rules (i.e. investment and competition, public procurement and investor protection legislation)
- The first two components will have direct economic impacts
- Third component includes mainly legal topics that do not have direct economic consequences or are not easy to evaluate
- Note: In our analysis we only include trade impacts, and no FDI changes associated with TTIP

Why is TTIP a "deep" PTA

- Traditional PTAs were focused on market access: reduce import tariffs and streamlining customs rules
- TTIP: EU-US tariffs are already relatively low (around 3% on average). So decrease remaining tariffs will not bring significant gains, although still important for specific sectors: processed food, motor vehicles
- Deep PTAs: focus on decreasing NTBs (behind the border measures) through regulatory cooperation
- NTB reductions in TTIP expected to yield the largest economic effects (Francois et al., 2013; Egger et al., 2015).

Regulatory cooperation

- Aim of regulatory cooperation is to partially reduce non-tariff barriers (also called technical barriers to trade: TBTs).
- Most regulations will be kept in place since they fulfil other objectives: to provide/keep protection standards (health, safety, consumer and labour standards, environmental protection, etc.) This reflects political and national preferences that are beyond the scope of trade policy
- Reducing NTBs is limited to a relatively small subset of overall regulations (Chase and Pelkmans, 2015): improve transparency and cooperation on product testing, inspection and certification, labelling, technical requirements and procedures
- But: standards remain unchanged! TTIP will not change: labour standards, environmental legislation, consumer protection rules, human health and safety, food safety standards, etc.
- Main idea: cooperate on the regulatory instruments used to achieve the current standards (huge public misinformation on this point!)

What are the expected economic effects from TTIP?

- Traditional trade policy: reducing tariffs will increase trade (sector-specific). In turn, this creates general equilibrium effects (changes in prices, production, consumption, employment, third countries)
- Deep FTAs: NTBs can be reduced but not completely eliminated (what is 'actionable' and not) and they will also have a direct effect on trade and indirect general equilibrium effects.
- However, US-EU are already highly integrated, so no structural changes expected, although potentially large increases in bilateral trade

What are the expected outcomes from TTIP?

- Expected benefits:
 - 1 Static efficiency gains (standard neoclassical approach: reducing distortions) with GDP/Welfare gains. This simple comparative advantage and economies of scale effects are estimated using CGE models.
 - 2 Dynamic gains (pro-competitive effects, creative destruction, innovation, agglomeration/cluster effects, increased FDI and investments) are harder to estimate.
- Expected costs: short-term labour displacement, changes in sectoral output (winners and losers), no wage inequality (since North-North trade).

Literature survey (with Eddy Bekkers)

- Two different methodologies:
 - ① CGE models: Medium-long term analysis of global (or national) shocks in a multi-region multi-sector model using MRIO data (GTAP), standard neoclassical modelling of consumption and production, non-homothetic demand, labour market effects and links with public finances and capital accumulation. Main advantage: detailed analysis of trade policy and overall implications on a broad set of variables. Main disadvantage: very complex models with many data and parameter requirements.
 - ② New structural gravity (SG) models: based on recent gravity literature. Good for estimating trade flows and trade costs (NTBs) but more simplified general equilibrium and employment effects. Main advantage: parsimonious and tractable models. Main disadvantage: too simplified (mostly single-sector, always single factor, less output variables)

Comparison of both methodologies

- CGE models (until recently) the standard approach to global trade policy analysis and used widely by policy researchers and policy-makers (e.g. DG-Trade, USITC, OECD, World Bank).
- SG models are mainly used by academic economists but their impact is increasing
- Both both methodologies share many features, and possibly will be some convergence. For instance, estimation of NTBs and trade elasticities done mainly by gravity estimations, and used both in CGE and SG models

- 1 Main issue with TTIP: estimation and expected reduction in NTBs (bottom-up or top-down). We follow gravity (top-down) approach from Egger et al. 2015.
- 2 Benchmark study CEPR (2013) finds GDP gains of around 0.5% with ambitious (50%) NTB reductions. Relatively same results for other CGE models: CEPII (2013), Ecorys (for NLD, 2012).
- 3 Egger et al. (Economic Policy, 2015) has more comprehensive NTB estimations and this results in larger gains (1 to 2% GDP gains) with ambitious NTB reductions.
- 4 Less standard: estimation of indirect 'spill-over' effects for third countries.
- 5 Relatively low labour displacement effects, while some important sectoral output changes.

- WorldScan (WS) is the CPB's in-house CGE model
- A typical CGE model consists of three main elements: the underlying general equilibrium economic model, the multi-regional input-output (MRIO) data and a set of exogenous parameters (i.e. trade and substitution elasticities).
- Standard CGE model (GTAP-class models):
 - 1 Based on GTAP-9 database with base year 2011
 - 2 In our TTIP study: 21 sectors and 31 regions (23 EU countries/aggregations, US, China, India, 5 global regions)
 - 3 Micro-economic founded neo-classical conditions: consumer and producer optimisation under budgetary constraints
 - 4 Consumption: modelled as non-homothetic demand system using LES
 - 5 Production: nested CES structure (using domestic and foreign intermediate inputs and four production factors), with monopolistic competition and increasing returns to scale based on a Dixit-Stiglitz-Armington demand specification.

- Explicit and detailed treatment of international trade, international transport margins and other trade costs (e.g. tariffs, NTBs, export subsidies).
- Bilateral trade is handled via CES preferences for intermediate and final goods, using the so-called Armington assumption (substitution driven by the region of origin).
- Finally, (relative) price flexibility to assure market clearing conditions and accounting identities
- In addition, for TTIP we use the endogenous labour supply version of WS:
 - ① The intensive margin (hours worked) is determined by optimising the consumption-leisure choice of a representative household
 - ② Extensive margin (participation) is modelled as the equilibrium between the expected utility of participation and a fixed cost of taking up work, which varies between households.
 - ③ Involuntary unemployment is also endogenously modelled using a collective bargaining mechanism.

- 1 Use similar trade costs shocks (tariff and NTBs) from Egger et al. 2015; but do not include regulatory spillover effects (controversial and difficult to assess their impact before TTIP is concluded)
- 2 Focus on results for the Netherlands, with special emphasis on employment and sectoral changes. But we also have results for most EU countries
- 3 Estimate direct (trade diversion) effects for third countries
- 4 This will provide up-to-date CGE estimations for NLD. So far, only Ecorys 2012 estimations, using old GTAP dataset and bottom-up NTB estimations

Table: Applied tariffs in transatlantic trade in goods, 2011

Sector	code	US tariffs	EU tariffs
Agriculture	AGR	2.9%	3.8%
Primary energy and mining	OMI	0.3%	0.1%
Energy	ENG	1.4%	1.3%
Processed foods	PFO	3.7%	12.3%
Low-tech manufacturing	LTM	3.3%	2.2%
Metals and minerals	MEM	2.0%	2.4%
Chemical, rubber and plastics	CRP	1.4%	2.5%
Motor vehicles and parts	MVH	1.0%	6.7%
Other transport equipment	OTN	0.5%	1.4%
Electronic equipment	ELE	0.3%	0.6%
Other machinery and equipment	OME	1.0%	1.4%

Source: GTAP-9 database.

Table: Estimated transatlantic NTB costs in manufacturing, ad valorem equivalents

Sector	code	Egger et al. 2015	own estimates
Agriculture	AGR	15.8	15.4
Primary energy and mining	OMI	16.1	16.1
Energy	ENG	n.a.	17.8
Processed foods	PFO	33.8	32.0
Low-tech manufacturing	LTM	3.6	5.4
Metals and minerals	MEM	16.7	10.2
Chemical, rubber and plastics	CRP	29.1	24.1
Motor vehicles and parts	MVH	19.3	17.1
Other transport equipment	OTN	n.a.	12.4
Electronic equipment	ELE	1.8	0.4
Other machinery and equipment	OME	6.2	5.8
Total manufacturing		13.7	12.6

Notes: We have a different sectoral aggregation than in Egger et al. 2015. The sectors with values for Egger et al. 2015 roughly correspond to our own sectoral definitions.

Table: Estimated transatlantic NTB costs in services, ad valorem equivalents

Sector	code	EU NTBs	US NTBs
Construction	CNS	4.6	2.5
Air transport	ATP	25.0	11.0
Water transport	WTP	1.7	13.0
Other transport	OTP	29.7	0.0
Communication	CMN	1.1	3.5
Finance	OFI	1.5	17.0
Insurance	ISR	6.6	17.0
Other commercial services	OCS	35.4	42.0
Recreational and other services	ROS	4.4	2.5
Government and public services	OSR	n.a.	n.a.

Sources: Egger et al. (2015) and Jafari and Tarr (2015).

- We have three scenarios:
 - ① Tariffs only (A): In our first scenario transatlantic tariffs are fully eliminated
 - ② NTBs only (B): In our second scenario NTBs for manufacturing and services are partially reduced. As in the CEPR study and Egger et al. (2015), we assume that 50% of the estimated manufacturing and services NTB costs are cut
 - ③ Full TTIP experiment (C): include both the tariff elimination and the NTB cost reductions
- The model is simulated between 2011 and 2030, with all the TTIP shocks scheduled for 2017.

Main TTIP results

Table: TTIP simulation results, for each scenario, percentage changes with respect to the baseline in 2030

	A. Tariffs only			B. NTBs only			Full (A+B)		
	NLD	EU28	USA	NLD	EU28	USA	NLD	EU28	USA
GDP	0.01	0.02	0.10	1.52	1.27	0.81	1.69	1.19	0.94
consumption per capita	0.01	0.01	0.09	2.79	2.15	1.74	3.11	2.16	1.93
export volume	0.21	0.35	1.45	3.43	5.41	18.28	3.94	6.24	21.45
import volume	0.25	0.35	1.15	6.57	7.88	20.88	7.50	8.99	23.85
real average wage	0.01	0.02	0.10	2.10	1.60	1.38	2.13	1.66	1.59

Notes: The scenario A simulates full elimination of bilateral tariffs. Scenario B simulates 50% cuts in manufacturing and services NTBs, except on Finance and Insurance.

Source: Own WorldScan estimations using GTAP9 database.

Table: Export values in full TTIP scenario, percentage changes with respect to the baseline in 2030

	Total	to EU	to US	to RoW
EU	6.2	-3.2	111.4	-0.3
US	19.1	119.0	0.0	-0.3
NLD	4.3	-2.0	95.4	-2.8

Note: Percentage changes are for export values, while previous results where volume changes. Each individual EU country is analysed separately, however, intra-EU trade represents the majority of EU countries trade flows. For the Netherlands, intra-EU trade represents around 70% of total trade and US trade is around 7%.

Source: Own WorldScan estimations using GTAP9 database.

TTIP sectoral results for The Netherlands

Table: Netherlands, sectoral percentage changes in the full TTIP scenario, with respect to the baseline in 2030

Sector	Code	Output		Exports	
		2011 shares	% change	2011 shares	% change
Agriculture	AGR	1.99	0.11	4.63	2.34
Oil and other mining	OMI	0.20	-0.01	0.18	4.70
Energy	ENG	6.50	0.85	13.37	4.92
Processed foods	PFO	5.41	5.36	11.51	10.88
Low-tech manufacturing	LTM	3.88	0.60	5.38	1.56
Metals and minerals	MEM	3.90	-3.26	8.23	-1.88
Chemical, rubber and plastics	CRP	4.49	4.68	17.72	7.32
Motor vehicles and parts	MVH	1.03	1.88	3.30	3.16
Other transport equipment	OTN	1.00	-6.68	1.25	22.68
Electronic equipment	ELE	1.50	0.76	2.87	1.32
Other machinery and equipment	OME	2.79	1.31	9.07	3.17
Construction	OTP	3.27	0.44	2.00	-0.59
Other transport	ATP	1.11	1.05	2.29	2.21
Air transport	WTP	1.29	1.14	0.85	-0.01
Water transport	CNS	9.21	2.18	0.76	1.18
Communication	CMN	2.39	1.22	1.37	1.39
Finance	OFI	2.76	1.11	0.41	1.03
Insurance	ISR	1.46	2.20	0.46	1.18
Other commercial services	OCS	20.99	1.77	11.92	9.38
Recreational and other services	ROS	3.73	1.49	0.72	2.46
Government and public services	OSR	21.09	1.71	1.72	0.57
Total		100.00	1.69	100.00	4.34

Table: TTIP full scenario, percentage changes with respect to the baseline in 2030

Region	Code	GDP	Exports
Other OECD countries	ROE	-0.21	-0.89
Rest of East Europe	EER	0.01	-0.16
China and Hong Kong	CHH	0.01	-0.15
ASEAN countries	ASE	-0.05	-0.26
India	IND	0.01	-0.20
Middle East and North Africa	MNA	-0.02	-0.09
Sub-Saharan Africa	SSA	-0.16	-0.96
Latin America and the Caribbean	LAC	-0.11	-0.63
Rest of the World	ROW	0.02	-0.27

Source: Own WorldScan estimations using GTAP9 database.

- We also have results on other relevant macro variables (not presented)
- Sectoral effects for US and other EU countries
- Labour markets: slight increase in total employment (around 0.5%), spurred by 2% increase in real wages (with exogenous labour supply, higher wage increase but fixed total employment)
- Wage inequality: both low and high-skill wages are increasing
- Labour displacement will have short term adjustment costs for those workers that need to change employment. These adjustment costs are not accounted for in the CGE model but are expected to be low (over long period: 5+ years, but could be high for particular workers).
 - For instance: reallocation across sectors is estimated to be 1.4% of the total employed population. For NLD: with 8.8 million employed workers in 2014 then 114,000 workers will need to be reallocated. This figure, however, is relatively low compared to the normal job reallocation in the Netherlands, where an estimated 13% of jobs are created and destroyed in a single year (Brull et al., 2010)

Sensitivity of results to NTB reductions

Table: TTIP simulation results using different NTB reductions, percentage changes with respect to the baseline in 2030

	Full TTIP			50% NTB reduction			25% NTB reduction		
	NLD	EU28	USA	NLD	EU28	USA	NLD	EU28	USA
GDP	1.69	1.19	0.94	0.81	0.59	0.55	0.39	0.30	0.33
consumption per capita	3.11	2.16	1.93	1.33	0.89	0.86	0.61	0.41	0.44
export volume	3.94	6.24	21.45	1.80	2.81	9.95	0.94	1.47	5.33
import volume	7.50	8.99	23.85	3.11	3.70	10.16	1.51	1.82	5.12
real average wage	2.13	1.66	1.59	0.91	0.68	0.73	0.42	0.32	0.39

Notes: The 50 and 25% NTB reduction are relative to the NTB reductions in the full TTIP scenario.

Source: Own WorldScan estimations using GTAP9 database.

- So far "static" (one-off) gains from trade associated with better allocation effects of decreased distortions (cuts in tariffs and NTBs)
- Dynamic gains (change in growth rates), increased trade and exposure to international competition can have additional effects:
 - ① Changes in factor accumulation of human and physical capital due to a larger market size (Baldwin, 1992; Wacziarg, 1998)
 - ② Reallocation of resources to firms with higher productivity levels (Melitz, 2003; Bernard et al., 2003)
 - ③ Productivity gains linked to trade-induced innovation (empirical evidence that firm-level productivity increases due to higher returns to innovation (see Melitz and Trefler, 2012, for an overview)
 - ④ Technological spillovers and learning effects that can indirectly increase innovation and productivity (i.e. R&D spillovers, Coe and Helpman, 1995; Coe et al., 2009)

Lower-bound effects from TTIP

- These theoretical dynamic gains from trade, nevertheless, are much harder to estimate empirically (although some recent evidence from Feyrer 2009, 2011)
- Therefore, the potential effects estimated before are likely to underestimate the full economic effects of TTIP
- Our methodology does not analyse additional economic effects from TTIP related to public procurement provisions, increased FDI flows and dynamic gains from trade
- Also, we do not include regulatory spillover effects to third countries
- To sum up: our results are likely to be lower-bound estimates of TTIP effects

- Bilateral trade between both regions will roughly double
- This is translated in positive but moderate GDP effects. For the Netherlands: 1.7% by the year 2030 (one-off but permanent increase)
- These expected results are conditional on the final negotiated agreement. Most CGE studies use as benchmark an "ambitious" deal that will significantly reduce current NTB levels

- Regulatory cooperation is *not* harmonisation of standards
- Investment Protection and Investor-to-State Dispute Settlement (ISDS). Main idea: states retain right to regulate, while making the system more transparent, and try to improve and streamline the current system: EU governments have already around 1400 investment protection agreements with different forms of ISDS (in particular, Eastern new-member states with US!)
- Aim of ISDS is to protect against discrimination against foreign firms and/or asset seizure. Very important for investors in emerging markets and less-developed countries, but less in developed countries with strong legal systems
- Threat of ISDS to national sovereignty has been exaggerated (not well explained/covered in the media), but domestic national systems in EU and US can handle investment disputes without ISDS (so why include them?)