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ABSTRACT

How Deep Is Your Love? A Quantitative Spatial Analysis of the Transatlantic Trade Partnership*

This paper explores the quantitative consequences of transatlantic trade liberalization envisioned in a Transatlantic Trade and Investment Partnership (TTIP) between the United States and the European Union. Our key innovation is to develop a *new quantitative spatial trade model* and to use an associated technique which is extraordinarily parsimonious and tightly connects theory and data. We take input-output linkages across industries into account and make use of the recently established World Input Output Database (WIOD). We also explore the consequences of labor mobility across local labor markets in Germany and the countries of the European Union. We address the considerable uncertainties connected both with the quantification of non-tariff trade barriers and the outcome of the negotiations by taking a corridor of trade liberalization paths into account.

JEL Classification: F10, F11, F12, F16

Keywords: international trade and trade policy, factor mobility, intermediate inputs, sectoral interrelations, transatlantic trade, TTIP

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1 Introduction

The liberalization of transatlantic trade envisioned in a Transatlantic Trade and Investment Partnership (TTIP) between the United States and the European Union is of paramount importance for the global economy as it involves economies accounting for almost one half of global value added and one third of world trade (Hamilton and Quinlan 2014). The tariffs prevailing in EU-US-trade are already very low (on average less than 3% for manufactures and slightly more for agricultural products). Hence, significant liberalization can only be achieved by tackling issues which go beyond the elimination of these tariffs and by moving towards 'deep integration' (Lawrence 1996), i.e. towards negotiations involving frictional barriers, environmental regulation, health and safety, labor standards, cultural diversity and investor state dispute settlement procedures. The design and legitimacy of these frictions, regulations, standards and rules have proven to be delicate issues in EU-US trade relations in the last decades, already, and they have stirred considerable public controversies ever since the TTIP negotiations started in June 2013 (Bhagwati 2013; Economist 2014a, 2014b). Many economists also fear that bilateral agreements, of which TTIP is about to become the most outstanding example, may undermine the global trading system (Bagwell et al. 2014; Bhagwati et al. 2014; Panagariya 2013).

Against the backdrop of these issues and controversies it is important to know what is at stake. This paper explores the quantitative consequences of the reallocation of resources associated with the liberalization of transatlantic trade for incomes, prices and welfare for the countries of the European Union, the United States and for the countries outside this bilateral agreement. Our key innovation on previous studies is that we take a spatial perspective in addressing transatlantic trade liberalization. More specifically, we are the first to use a new quantitative spatial trade model and an associated recent technique which is extraordinarily parsimonious, tightly connects theory and data, and allows us to flexibly address non-tariff barriers which are inherently extremely difficult to quantify.

Our approach delivers two important returns. First, we show that the welfare gains associated with the liberalization of transatlantic trade are dramatically overestimated if land (in its role as a consumption good, in particular) is excluded from the model. Second, we trace the effects of trade liberalization not only down to countries, but also down to local labor markets, and by allowing for labor mobility within a country (Germany) and within an economic union (the EU), we offer results from a long-run spatial equilibrium point of view. This wider perspective is important because there is growing public and academic awareness of the local labor market consequences of shifts in the global economy (Autor et al. 2013; Dauth et al. 2014; Moretti 2010).

We consider a version of the Ricardian model developed in Redding (2014) which introduces land for housing and production and factor mobility into new quantitative trade models.[1] We extend his model to comprise an arbitrary number of heterogeneous industries with input-output linkages similar to Caliendo and Parro (2014). Perfectly competitive industries use labor and land together with intermediates to produce their outputs. As in Eaton and Kortum (2002), productivities are drawn from country and industry specific distributions, leading to different marginal costs and prices. Consumers and firms source goods from the lowest cost supplier (after trade costs). The resulting international trade pattern follows the law of gravity. We consider both labor immobility and mobility between subgroups of locations. In the latter case, real wages are equalized across a subgroup of locations. In both cases the equilibrium is characterized by a set of simple conditions involving market clearing, bilateral expenditure shares, price indices and population shares.

Applying a technique recently developed by Dekle et al. (2007) allows us to get rid of many exogenous parameters which will enter only indirectly through their effect on the observed ex-ante values of equilibrium variables. In particular, we neither need to estimate substitution elasticities nor the locations' technology levels. Most importantly, however, *we do not need the bilateral trade cost matrix and hence, we do not have to quantify tariff equivalents of the pre-existing non-tariff barriers*, a task that has led to widely differing results[2]. Instead, we rely on the fact that these parameters are embedded in the observed ex-ante trade flows. This new technique proves particularly handy in view of the difficulties associated with the quantification of non-trade barriers and the uncertainties about the outcome of the EU-US negotiations – the 'depth' of the final trade liberalization measures. We address these uncertainties by considering a range of conceivable trade cost reductions up to a most ambitious scenario involving an across the board non-tariff barrier reduction by 25%. However, we would like to stress that our model and methodology is well-suited to address any liberalization scenario. We provide a robustness check involving one sectorally asymmetric liberalization path.

We make use of the recently established World Input Output Database (WIOD), which provides information for 41 countries and 35 industries (Timmer et al. 2012). Our disaggregated

1 Costinot and Rodriguez-Claré (2014) provide a lucid recent survey of new quantitative trade modelling. Building on Helpman (1998), the importance of land for consumption and production has recently also been addressed by Pflüger and Tabuchi (2011) and further discussed in Fujita and Thisse (2013).
2 We discuss this issue in depth in section 4.5.

approach enables us to track down the reallocation effects to the level of countries and local labor market and to the level of industries. We explore both a 'pure trade effect', which assumes that labor is immobile across locations and a 'labor mobility regime' within Germany and across the member countries of the European Union. Our analysis delivers six key findings.

First, starting with the pure trade effect, even in the most extreme scenario, a trade barrier reduction of 25% between the United States and the European Union, real income gains at the level of countries are in the range of up to 2%, except for Ireland and Luxembourg which derive larger gains. The bilateral trade liberalization has negative welfare effects on third countries, but these are typically small. Russia, Canada and Mexico, being tightly integrated with the EU and the US, respectively, but not involved in the transatlantic partnership, would experience strong negative welfare effects associated with trade diversion. We rationalize these findings by showing that the strongest winners and strongest losers exhibit the closest ex-ante connections with the US as measured by the initial shares of US goods in their total spending (except Russia, which has strong ties with the EU). These spending shares are small – even in our age of globalization – which explains why the results are limited, overall. The fabrics of real income changes with pure trade (labor immobility within Europe) vary considerably across countries. The biggest winner, Ireland, for example, reaps overall welfare gains due to dramatic wage increases and despite higher prices. On the other hand, most Eastern European countries, benefit from falling prices despite reduced wages.

Second, a key result of our analysis is that the inclusion of land, in particular its use for housing, has a dramatic effect on welfare. We find that, in our model, a disregard of land would imply that the static real income effects are about one third higher. This explains why we find more limited effects than analyses which ignore land. Since expenditures on land indeed are important in practice, real income effects associated with trade liberalization are strongly overstated in these previous analyses. In pointing to the importance of land, our analysis also contributes to the more general discussion of the sensitivity of the new quantitative trade models to auxiliary assumptions (see Costinot and Rodriguez-Claré 2014, section 5).

Third, the industry effects (measured by production values) are mild in most countries of the European Union and in the United States. For Germany, to take one example, we find that electrical equipment and metal obtain a boost, whereas telecom, transport and agriculture shrink. Ireland, which experiences the strongest real income effects is an exception: our analysis predicts a strong boost for financial, electrical equipment and chemical products (including pharmaceuticals).

Fourth, turning to the local labor markets ('Landkreise') within Germany, we obtain the very interesting and important finding that, despite their heterogeneity and before allowing for labor mobility, all German locations win. This is remarkable, because our model, in principle, allows for negative welfare effects through terms of trade movements which work through wage adjustments across locations. The fear that TTIP might only benefit already rich locations in Germany at the cost of poorer ones is not supported by our results. Yet even in our ambitious scenario the potential gains are limited to between 1.1 and 1.8 percent of real income. Allowing for labor mobility within Germany, these welfare effects level out at 1.41%.

Fifth, a very long-run and admittedly extreme scenario of population mobility within the European Union predicts migration flows from eastern European countries into Ireland, Luxembourg and, to a lesser extent, into Great Britain. In the most extreme scenario real income gains among EU members would then level at just below 1.5% as a result of labor mobility. Our analysis shows that the bulk of the adjustment to the spatial equilibrium within the European Union takes place through the adjustment of land prices.

Finally, contrasting transatlantic trade liberalization with a multilateral trade deal we find that a multilateral reduction of trade barriers in the range of 4% to 5% would be enough for Europe to achieve the same welfare gains as in our most ambitious TTIP scenario. For the US, however, this would require a decrease in multilateral barriers of 11% to 12%. This finding points to the importance of Bhagwati's (1994) prediction that a 'hegemonic power' is likely to gain more by bargaining sequentially than simultaneously and hence, why the US embraces preferential liberalization today.

Relation to the previous literature. Our analysis is related to the growing literature on new quantitative trade modelling. This literature has provided momentous stimuli to the research pertaining to the quantification of the gains from trade, and the consequences of the advancing globalization of economic activity, more generally. A hallmark of the new quantitative trade models is that they have solid, yet possibly different, micro-foundations (spanning from perfect competition to monopolistic competition), which give rise to common gravity-type macro-level predictions for bilateral trade flows as a function of bilateral trade costs. We build on the Ricardian tradition established in the seminal work by Eaton and Kortum (2002) and generalized by Redding (2014) to comprehend factor mobility and by Caliendo and Parro (2014) to comprise an arbitrary number of heterogeneous interlinked industries. Only recently have these new quantitative trade models been applied to trade policy and trade liberalization issues. Prominent examples are Ossa (2014), addressing optimal tariffs in a world-wide trade war, Redding (2014), studying the trade integration between the United States and Canada, Costinot and Rodriguez-Claré (2014), providing estimates of trade integration for OECD countries, and Caliendo and Parro (2014), examining the trade integration between the United States and Mexico in the wake of the establishment of NAFTA. Our paper borrows the modelling of input-output linkages from Caliendo and Parro (2014). Our joint consideration of input-output linkages, of land for consumption and production and of labor mobility is novel. We are also the first to apply such a model to the transatlantic trade partnership.

Our paper also relates to a small literature which has provided estimates of the economic effects of a transatlantic trade and investment partnership. Francois et al. (2013) set up a multi-region, multi-sector global computable general equilibrium (CGE) model which, in most sectors, assumes perfect competition under the Armington assumption, but in some heavy manufacturing sectors allows for imperfect and monopolistic competition and thereby also accounts for gains from specialization. In addition to looking at static effects, longer-run impacts of trade through investment effects on capital stocks are also considered. The data on non-tariff barriers are drawn from Ecorys (2009). Fontagné et al. (2013) base their computations on MIRAGE, another computable general equilibrium for the world economy developed by CEPII. This model differs in some choices from Francois et al. (2013) but also features multiple industries and it also relies on the Armington assumption. Our analysis differs from works of this type both in our modelling approach, the reliance on a medium-sized new quantitative trade model with Ricardian micro-foundations rather than the Armington approach, and our different solution method, which is less demanding in terms of the parameters needed. Given our far different choices, we consider our analysis to be complementary to these two studies.

The work by Felbermayr et al. (2014; 2013) and Aichele et al. (2014) is closest to our approach. Felbermayr et al. (2014; 2013) employ a structurally estimated single-sector general equilibrium model in the tradition of Helpman and Krugman (2005). The strategy pursued in Felbermayr et al. (2014; 2013) differs from the computable general equilibrium tradition in that the parameters of the model are estimated on those data that the model has to replicate in the baseline equilibrium without drawing on the method established by Dekle et al. (2007). Aichele et al. (2014), in contrast, draw on this methodology and follow this line of research by using a model in the Ricardian tradition of Eaton and Kortum (2002) and Caliendo and Parro (2014), thereby also taking account of input-output linkages. Our analysis differs from theirs, most notably in our inclusion of land in consumption and production and in our spatial equilibrium perspective. Moreover, we allow for a corridor of liberalization scenarios, whereas a key focus of Aichele et al (2014) is to base their analysis of TTIP on an estimate of shallow and deep integration scenarios observed in previous preferential trade agreements. We address their preferred scenario in our robustness analysis.

The structure of our paper is as follows. Chapter 2 sets up our quantitative general equilibrium model. Chapter 3 characterizes our empirical methodology and the data. Chapter 4 proceeds to our empirical analyses starting out with the pure trade effects and concluding with a discussion against the background of other analyses. Chapter 5 offers some final remarks.

2 The model

The setup. Our analysis builds on the research on quantitative trade models that evolved in the wake of Eaton and Kortum (2002). More specifically, we consider a version of the model developed in Redding (2014) which allows for (costly) trade of final goods and of intermediate goods between all locations and for factor mobility between a subgroup of locations. We extend Redding's one-sector framework to comprise an arbitrary number of heterogeneous industries (sectors) similar to Caliendo and Parro (2014).[3] The economy consists of M countries (or country groups) which we index by m and N locations indexed by $s \in \{n, i\}$. Each location is endowed with an exogenous quality-adjusted amount of land H_n. Countries m consist of a subset of locations $N^m \subset N$ and are exogenously endowed with a measure of $\bar{L}^m$ workers who supply 1 unit of labor each. Labor is used to produce a continuum of differentiated goods in each of K industries (sectors) indexed by k and j. Workers are immobile between countries but perfectly mobile between locations within a country, as well as between sectors. Hence, in a spatial equilibrium real wages are equalized across a country's locations. Finally, we assume that all locations can trade with each other subject to iceberg trade costs so that $d_{nik} \geq 1$ units of a good produced in industry k in region i have to be shipped in order for one unit of the good to arrive in n. We assume that goods trade within a region is costless, $d_{nnk} = 1$.

Preferences. Preferences of the representative consumer in region n are defined over the consumption of goods C_n and the residential use of land H_n^C and take the Cobb-Douglas form:

$$U_n = \left(\frac{C_n}{\alpha}\right)^{\alpha} \left(\frac{H_n^C}{1-\alpha}\right)^{1-\alpha}, \qquad 0 < \alpha < 1 \tag{1}$$

The consumption aggregate C_n is defined over the consumption of the outputs of $k = 1 \dots K$ industries (C_{nk}) and is also assumed to be of Cobb-Douglas form

3 Michaels et al. (2012) consider an economy comprising a manufacturing sector and an agricultural sector.

$$C_n = \prod_{k=1}^{K} C_{nk}{}^{\delta_{nC}^{k}}, \qquad 0 \le \delta_{nC}^{k} \le 1,\ \sum_{k=1}^{K} \delta_{nC}^{k} = 1 \tag{2}$$

where δ_{nC}^{k} are the constant consumption shares on industries k. Each industry offers a continuum of varieties $\omega \in [0,1]$ which enter preferences according to a constant elasticity of substitution function

$$C_{nk} = \left[\int_0^1 q_{nk}(\omega)^{\frac{\sigma_k - 1}{\sigma_k}} d\omega\right]^{\frac{\sigma_k}{\sigma_k - 1}} \qquad \sigma_k > 1 \tag{3}$$

where $q_{nk}(\omega)$ is consumption of variety ω produced in industry k in region n and σ_k denotes the (constant) within-industry elasticity of substitution between any two varieties. The assumption of a continuum of varieties within each sector ensures that each individual good and producer are of zero weight within the economy.

Production. Production of each variety ω within any industry k and at any location n takes place with constant returns to scale and under perfect competition combining labor, land and all available varieties of outputs as intermediate inputs. Regions and industries differ in terms of their input mix and their productivities $z_{nk}(\omega)$, however. We follow Eaton and Kortum (2002), Caliendo and Parro (2014) and Michaels et al. (2012) by assuming that productivities are drawn independently from region and industry specific Fréchet distributions with cumulative density functions given by

$$F_{nk}(z_{nk}) = e^{-T_{nk} z_{nk}{}^{-\theta_k}} \tag{4}$$

where T_{nk} is a scale parameter which determines average productivity and the shape parameter θ_k controls the dispersion of productivities across goods within each sector k, with a bigger θ_k implying less variability. Taking iceberg costs $d_{nik} \ge 1$ into account, the cost to a consumer in region n of buying one unit of ω in sector k from a producer in region i is thus

$$p_{nik}(\omega) = \frac{d_{nik} c_{ik}}{z_{ik}(\omega)}, \qquad 0 < \beta_{nk} < 1,\ 0 < \eta_{nk} < 1 \tag{5}$$

where c_{ik} are the costs of an input bundle given by

$$c_{ik} = w_i^{\beta_{ik}} r_i^{\eta_{ik}} \rho_{ik}^{1-\beta_{ik}-\eta_{ik}}, \qquad 0 < \beta_{ik} < 1,\ \ 0 < \eta_{ik} < 1 \tag{6}$$

with w_i, r_i and ρ_{ik} being the wage rate, the rental rate of land, and the industry specific index of intermediate input prices in i, respectively, and where β_{ik} and η_{ik} are the exogenous cost shares of labor and land.

Expenditure shares and price indices. Consumers and producers treat goods as homogeneous and consequentially source each good from the location that provides it at the lowest price. Hence,

$$p_{nk}(\omega) = min\{p_{nik}(\omega); i = 1 \dots N\} \qquad k = 1 \dots K \tag{7}$$

Using equilibrium prices and the properties of the Fréchet distribution as in Eaton and Kortum (2002), the share of expenditure of region n in industry k on goods produced in region i is:

$$\pi_{nik} = \frac{T_{ik}(d_{nik}c_{ik})^{-\theta_k}}{\sum_{s=1}^{N} T_{sk}(d_{nsk}c_{sk})^{-\theta_k}} \tag{8}$$

The implied perfect CES price index P_{nk} for industry aggregates (subutility) C_{nk} is

$$P_{nk} = \gamma_k \left[\sum_{i=1}^{N} T_{ik}(d_{nik}c_{ik})^{-\theta_k}\right]^{-\frac{1}{\theta_k}} \tag{9}$$

where $\gamma_k \equiv \left[\Gamma\left(\frac{\theta_k+1-\sigma_k}{\theta_k}\right)\right]^{\frac{1}{1-\sigma_k}}$ and $\Gamma(\cdot)$ denotes the gamma function and where we assume that $1 + \theta_k > \sigma_k$. The Cobb-Douglas price index for overall consumption is:

$$P_n = \prod_{k=1}^{K} P_{nk}^{\delta_{nC}^{k}} \tag{10}$$

Finally, we allow for the intermediate goods mix used by firms to differ from the mix used in consumption and to vary across industries and regions. Hence, the intermediate goods price index ρ_{nj} of industry j in region n can be written as

$$\rho_{nj} = \prod_{k=1}^{K} P_{nk}^{\delta_{nj}^{k}}, \qquad 0 \leq \delta_{nj}^{k} \leq 1, \quad \sum_{k=1}^{K} \delta_{nj}^{k} = 1 \tag{11}$$

where δ_{nj}^{k} is the share of industry k in the input mix of industry j in country n.

Income and land rents. We follow Redding (2014) by assuming that a region's land rent is evenly distributed among that region's consumers. Hence, with v_n denoting expenditure per capita in region n, that region's total expenditure is

$$v_n L_n = w_n L_n + (1-\alpha) v_n L_n + \sum_{k=1}^{K} \eta_{nk} R_{nk} + D_n \tag{12}$$

where R_{nk} is the total revenue of industry k firms in region n and D_n a fixed transfer accounting for the country's trade deficit (surplus if negative). The first term on the right hand side (RHS) is labor income from production and the two following terms are the incomes from expenditures on residential land use and from commercial land use, respectively. Since labor costs are a constant share β_{nk} of revenue in each industry,

$$w_n L_n = \sum_{k=1}^{K} \beta_{nk} R_{nk}, \tag{13}$$

we can rewrite total expenditure as:

$$v_n L_n = \frac{\sum_{k=1}^{K}(\beta_{nk}+\eta_{nk})R_{nk}+D_n}{\alpha} \quad (14)$$

Goods market clearing commands that the sum of spending from all regions on goods produced in region i and industry k must equal that industry's revenue. Using eq. (14) this yields:

$$R_{ik} = \sum_{n=1}^{N} \pi_{nik}\{\sum_{j=1}^{K}[\delta_{nC}^{k}(\beta_{nj}+\eta_{nj}) + \delta_{nj}^{k}(1-\beta_{nj}-\eta_{nj})]R_{nj} + \delta_{nC}^{k}D_n\} \quad (15)$$

where the term in parenthesis represents the combined consumption and intermediate demand of country n for industry k goods.

Land market clearing requires that total rent income must equal total spending on land:

$$r_n H_n = (1-\alpha)v_n L_n + \sum_{k=1}^{K}\eta_{nk}R_{nk}$$

This together with eq. (14) allows to write a region's rental rate of land in terms of its endogenously determined revenues, as well as its exogenously given trade deficit and supply of land:

$$r_n = \frac{\sum_{k=1}^{K}[(1-\alpha)\beta_{nk}+\eta_{nk}]\,R_{nk}+(1-\alpha)D_n}{\alpha H_n} \quad (16)$$

Labor mobility. Corresponding to utility function (1), the welfare of a worker residing in region n, is given by her real income

$$V_n = \frac{v_n}{{P_n}^{\alpha}{r_n}^{1-\alpha}} \quad (17)$$

The mobility of labor across regions within a country m ensures that real incomes are equalized (whilst the international immobility of workers implies that real incomes can differ across countries). Hence, there is a common utility level $\bar{V}^m$ which pertains across locations within country m. Using income per capita from eq. (14) and the rental rate of land from eq. (16) we can solve for the population in region n in terms of the endogenously determined revenues, price indices, and common utility level, as well as the exogenously given trade deficit and housing supply:

$$L_n = \frac{\sum_{k=1}^{K}(\beta_{nk}+\eta_{nk})R_{nk}+D_n}{\alpha^{\alpha}{P_n}^{\alpha}\left[\frac{\sum_{k=1}^{K}\left((1-\alpha)\beta_{nk}+\eta_{nk}\right)R_{nk}+(1-\alpha)D_n}{H_n}\right]^{1-\alpha}\bar{V}^m}, \qquad \forall\, n \in N^m \quad (18)$$

General equilibrium. The general equilibrium of the model can be represented by the following system of four equations which jointly determines for all locations n the set of industry revenues R_{nk}, price indices P_{nk}, each locations region-sector trade shares π_{nik}, and the population shares in each region, $\lambda_n^m \equiv L_n/\bar{L}^m$:

$$\pi_{nik} = \frac{T_{ik}(d_{nik}c_{ik})^{-\theta_k}}{\sum_{s=1}^{N} T_{sk}(d_{nsk}c_{sk})^{-\theta_k}}$$

$$P_{nk} = \gamma_k \left[\sum_{i=1}^{N} T_{ik}(d_{nik}c_{ik})^{-\theta_k}\right]^{-\frac{1}{\theta_k}}$$

$$R_{ik} = \sum_{n=1}^{N} \pi_{nik} \left\{\sum_{j=1}^{K}\left[\delta_{nC}^{k}\left(\beta_{nj} + \eta_{nj}\right) + \delta_{nj}^{k}\left(1 - \beta_{nj} - \eta_{nj}\right)\right] R_{nj} + \delta_{nC}^{k} D_n\right\}$$

$$\lambda_n^m = \frac{\dfrac{\sum_{k=1}^{K}(\beta_{nk}+\eta_{nk})R_{nk}+D_n}{P_n{}^{\alpha}\left(\frac{\sum_{k=1}^{K}\left((1-\alpha)\beta_{nk}+\eta_{nk}\right)R_{nk}+(1-\alpha)D_n}{H_n}\right)^{1-\alpha}}}{\sum_{i\in N^m}\left[\dfrac{\sum_{k=1}^{K}(\beta_{ik}+\eta_{ik})R_{ik}+D_i}{P_i{}^{\alpha}\left(\frac{\sum_{k=1}^{K}\left((1-\alpha)\beta_{ik}+\eta_{ik}\right)R_{ik}+(1-\alpha)D_i}{H_i}\right)^{1-\alpha}}\right]} \tag{19}$$

where $c_{ik} = \left(\frac{\sum_{k=1}^{K}\beta_{ik}R_{ik}}{L_i}\right)^{\beta_{ik}} \left(\frac{\sum_{k=1}^{K}\left((1-\alpha)\beta_{ik}+\eta_{ik}\right)R_{ik}+(1-\alpha)D_i}{\alpha H_i}\right)^{\eta_{ik}} \left(\prod_{k=1}^{K} P_{nk}^{\delta_{nj}^{k}}\right)^{1-\beta_{ik}-\eta_{ik}}$ (20)

This equation system involves the bilateral industry trade shares, eq. (8), price indices, eq. (9), and goods market clearing, eq. (15). The shares of country m's population living in region n, eq. (19), follow from applying $\lambda_n^m \equiv L_n/\bar{L}^m$ together with $\bar{L}^m = \sum_{n\in N^m} L_n$ to eq. (18). Finally, the marginal costs c_{ik} are calculated by using the input price indices, eq. (11), wages, eq. (13), and rental rates of land, eq. (16), to replace the corresponding values in eq. (6).

3 Empirical Strategy

3.1 Counterfactual analysis

We apply the method introduced by Dekle, Eaton and Kortum (2007) to study the effects of a counterfactual change in inter-regional trade costs d_{nik}. We denote the value that an endogenous variable x takes in the counterfactual equilibrium with a prime (x') and its relative value in the counterfactual and initial equilibria by a hat $(\hat{x} \equiv x'/x)$. Starting from the equilibrium system specified in the previous section and defining total expenditure $Y_n \equiv v_n L_n$, and total wage income $W_n = w_n L_n$ the counterfactual equilibrium values must satisfy:

$$\pi'_{nik} = \frac{\pi_{nik}\left(\hat{d}_{nik}\hat{c}_{ik}\right)^{-\theta_k}}{\sum_{s\epsilon N} \pi_{nsk}\left(\hat{d}_{nsk}\hat{c}_{sk}\right)^{-\theta_k}} \tag{21}$$

$$\hat{P}_{nk} = \left[\sum_{i=1}^{N} \pi_{nik}\left(\hat{d}_{nik}\hat{c}_{ik}\right)^{-\theta_k}\right]^{-\frac{1}{\theta_k}} \tag{22}$$

$$R'_{ik} = \sum_{n=1}^{N} \pi'_{nik} \{\sum_{j=1}^{K} [\delta_{nC}^{k} (\beta_{nj} + \eta_{nj}) + \delta_{nj}^{k} (1 - \beta_{nj} - \eta_{nj})] R'_{nj} + \delta_{nC}^{k} D_n\} \quad (23)$$

$$\lambda'^{m}_{n} = \frac{\lambda_n^m \left(\frac{\hat{Y}_n}{\hat{P}_n^{\alpha} \hat{r}_n^{1-\alpha}} \right)}{\sum_{i \in N^m} \lambda_i^m \left(\frac{\hat{Y}_i}{\hat{P}_i^{\alpha} \hat{r}_i^{1-\alpha}} \right)} \quad (24)$$

where $\hat{c}_{ik} = \left(\frac{\widehat{W}_i}{\widehat{\lambda}_i^m}\right)^{\beta_{ik}} \hat{r}_i^{\eta_{ik}} \left(\prod_{j=1}^{K} \hat{P}_{ij}^{\delta_{ik}^{j}}\right)^{1-\beta_{ik}-\eta_{ik}}$, $\hat{r}_n = \frac{\sum_{k=1}^{K}[(1-\alpha)\beta_{nk}+\eta_{nk}]R'_{nk}+(1-\alpha)D_n}{\sum_{k=1}^{K}[(1-\alpha)\beta_{nk}+\eta_{nk}]R_{nk}+(1-\alpha)D_n}$,

$\widehat{W}_n = \frac{\sum_{k=1}^{K} \beta_{ik} R'_{ik}}{\sum_{k=1}^{K} \beta_{ik} R_{ik}}$ and $\hat{Y}_n = \frac{\sum_{k=1}^{K}(\beta_{nk}+\eta_{nk})R'_{nk}+D_n}{\sum_{k=1}^{K}(\beta_{nk}+\eta_{nk})R_{nk}+D_n}$.

The implied change in real income ($\hat{V}_n \equiv V'_n/V_n$) for a consumer living in region n in country j is then, under labor mobility:

$$\hat{V}_n = \frac{\hat{Y}_n}{\hat{r}_n^{1-\alpha}} \prod_k \hat{\pi}_{nnk}^{-\alpha\frac{\delta_{nC}^{k}}{\theta_k}} \hat{c}_{nk}^{-\alpha\delta_{nC}^{k}} \quad (25)$$

An inspection of the equation system characterizing the counterfactual, eq. (21) - (24) and of the implied change in the real income (25) reveals the parsimony of our method. In order to numerically solve this equation system we only need information concerning a small number of exogenous variables, the share of goods in consumption (α), the cost shares of labor and land (or intermediates), (β_{nk}, η_{nk} or $1 - \beta_{nk} - \eta_{nk}$), sectoral expenditure and cost shares ($\delta_{nC}^{k}, \delta_{nj}^{k}$) for which data are readily available, and estimates for the sectoral productivity dispersion (θ_k). Neither does our method require information concerning the elasticity of substitution (σ_k), nor on the region- and sector specific scale parameters of technology (T_{nk}) or the factor supplies (except for population shares of regions within countries). Most importantly, however, no information is needed concerning the multidimensional matrix of trade frictions (d_{nik}), the key advantage of this method established by Dekle, Eaton and Kortum (2007).

Notice that a regime of pure trade but without factor mobility among a subset of locations is simply represented by imposing $\hat{\lambda}_n^m = \lambda'^m_n/\lambda_n^m = 1$ in the above system. We will make use of this in our ensuing empirical analysis in order to identify and distinguish the (medium-run) pure trade effects from the longer-run effects of labor mobility within the European Union.

3.2 Data

In addition to the data requirements concerning the exogenous parameters of our model (α, β_{nk}, η_{nk}, δ^k_{nC}, δ^k_{nj}, θ_k) we simply need a matrix of bilateral industry trade shares π_{nik} which includes own-trade. We use the World Input Output database (WIOD) as our main data source. This data set provides a time-series of world input-output tables compiled on the basis of officially published input-output tables in combination with national accounts and international trade statistics. We take the data for the year 2011 as it is the most current year available in the database at the time of writing. The world input-output table for this year covers data from 35 industries in 41 countries, including one artificial "rest of the world" (ROW) country.

Due to differences in sector classifications across countries, some countries have zero output and consumption in some of these 35 sectors. For example, there is zero production in China and Indonesia in 'sale, maintenance and repair of motor vehicles and motorcycles; retail sale of fuel' and in Sweden and Luxembourg in 'leather, leather and footwear'[4]. To avoid the problems associated with zero output and consumption we aggregate the data to 29 industries according to table 1 in the appendix. The countries include all current members of the European Union, except for Croatia which has not been a part of the Union in 2011, as well as the US and all major trading partners of the EU and the US. The complete list is provided in table 2 in the appendix. We use the resulting input-output table to derive the consumption and intermediate good shares (δ^k_{nC} and δ^k_{nj}), the share of value added ($\beta_{nk} + \eta_{nk}$) and the bilateral industry trade shares (π_{nik}). Appendix A1 explains this derivation and details how we handle inventory changes and zeros in bilateral trade flows.

In line with the previous literature we choose a value of $\alpha = 0.75$ for the share of goods in consumption.[5] To split value added between labor and land, we borrow from Davis and Ortalo-Magné (2011), who calculate the income shares of land and structures for different US sectors. In particular we set the share of land in value added at 32%, 15%, 9%, and 21% in agricultural, manufacturing, construction and service sectors, respectively.

For data on the labor force we rely on the WIOD Socio Economic Accounts (SEA). We use the numbers for 'people engaged', which include self-employed and family-workers, for the year

4 There is also zero production in Cyprus, Luxembourg, Latvia and Malta in 'coke, refined petroleum and nuclear fuel' and for several countries in the sector 'private households with employed persons' and zero consumption in Latvia and Cyprus in 'water transport', in Luxembourg in 'air transport' and, again in several countries in the sector 'private households with employed persons'.

5 This accords with Redding (2014). A slightly lower value of 73.6% is reported by Statistisches Bundesamt (2011) for Germany.

2011 which are consistent with the data above.[6] Since, there is no value for ROW we use the International Labor Associations' estimate of the worldwide work force of 3 billion people and subtract the work force of all other countries in our model.

4 The liberalization of transatlantic trade

4.1 Pure Trade Effects

In response to the uncertainties concerning the outcome of the trade negotiations and the inherent difficulties to derive tariff equivalents for non-tariff barriers, we consider a range of conceivable reductions of non-tariff barriers between the EU and the US. We keep this range within the lines hypothesized in previous studies so that the most ambitious scenario that we consider involves a non-tariff barrier reduction by 25%.

Real income changes - pure trade. Figure 1 reports our findings for the change in real incomes, $\hat{V}_n \equiv V_n'/V_n$ from eq. (25) for the pure trade scenario, $\hat{\lambda}_n^j = \lambda_n'^j/\lambda_n^j = 1$ (no labor mobility in Europe). As can be seen, there are two very strong winners in Europe, Ireland and Luxembourg. In the most ambitious scenario of a trade barrier reduction of 25%, Ireland would reap a real income gain of more than 13% and Luxembourg of more than 4%. Great Britain, the Netherlands and Belgium are the only other countries that gain (slightly) more than 2%. In the selection of countries shown, the United States and Germany follow with real income gains at around 1.7% and 1.5% (table 3 in the appendix provides the full list of results). In the full sample only Sweden experience similar effects as the United States. For the rest of the countries the quantitative effects are much milder, even in this most ambitious scenario. Figure 1 also reveals that there is trade diversion: Taiwan and the ROW-countries experience negative welfare effects. Trade diversion is similarly strong for Mexico and Canada, as these countries are very tightly integrated with the United States but would not be involved in transatlantic trade liberalization.

Figure 2 provides complementary information concerning the initial spending shares on US goods and services. We have ordered the countries from the strongest losers of transatlantic trade liberalization (Taiwan, Korea, Russia, Mexico, China and Canada) to the strongest winners, Great Britain, Luxembourg and Ireland. It becomes apparent that both the strongest winners and the strongest losers exhibit the closest ex-ante connections with the United States (except for Russia which has strong ties with the EU): the spending shares on US goods and

[6] See Timmer (2012) and Timmer et al. (2007) for details on the work force data.

services from Luxembourg and Ireland are in the range of 9% to 10% and the spending shares of Canada and Mexico are only slightly lower, at around 8%. Figure 2 reveals in addition that the limited overall welfare results, that we have diagnose, stem from the small share that US goods have in overall spending in most of the countries. For most countries apart from the mentioned ones, these shares are well below 2%.

Figure 1: Welfare effects of trade barrier reduction; pure trade regime

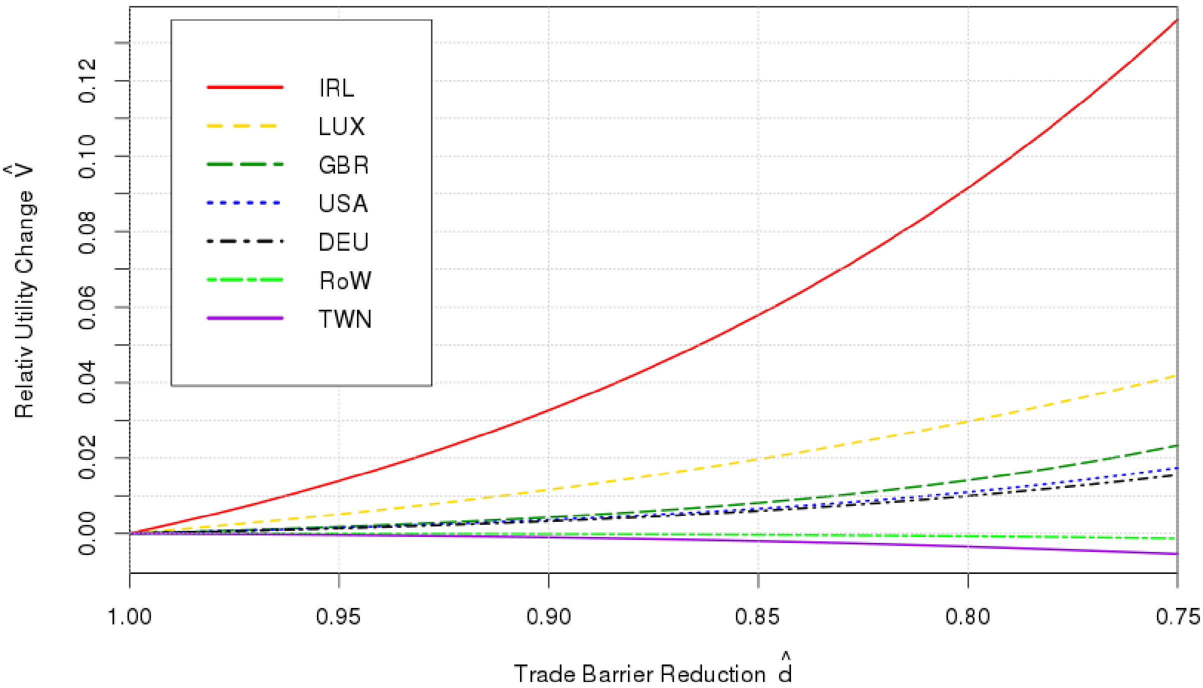


Figure 2: Welfare effects and initial spending shares

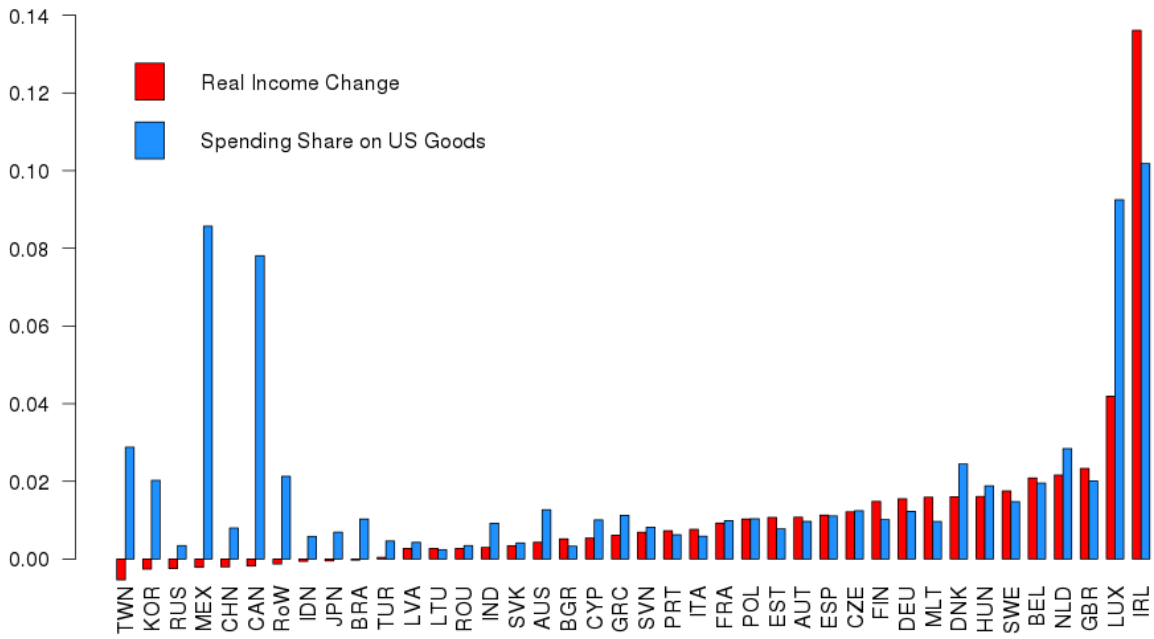
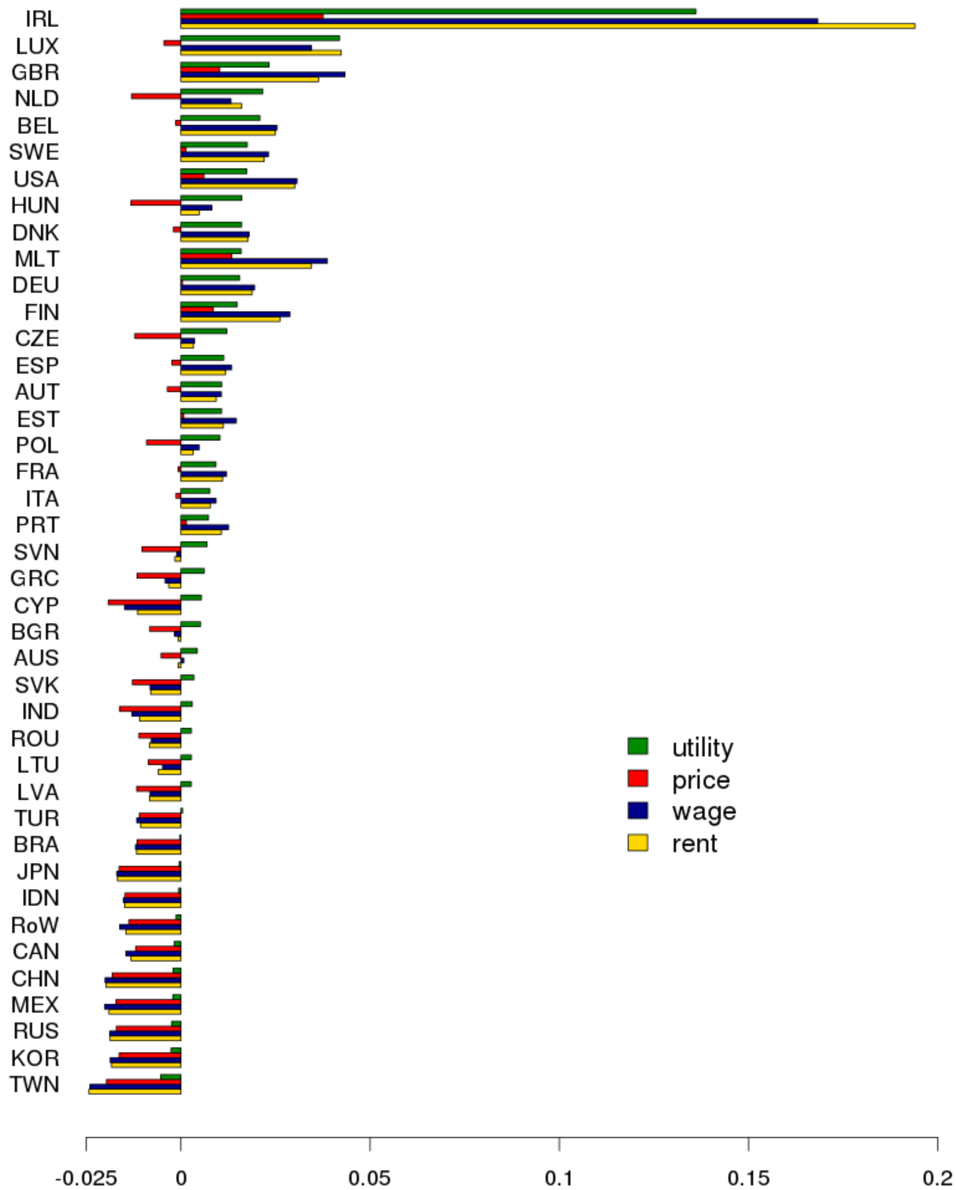


Figure 3 provides a detailed look into the fabrics of the real income changes. As is clear from eq. (17), real income is composed of nominal income, goods prices and land prices. A breakdown of the overall welfare change into the changes in goods prices and incomes and land rents is provided in that figure. The numbers reported are for the most ambitious trade liberalization scenario. It is interesting to note that the overall welfare effects have very heterogeneous roots.

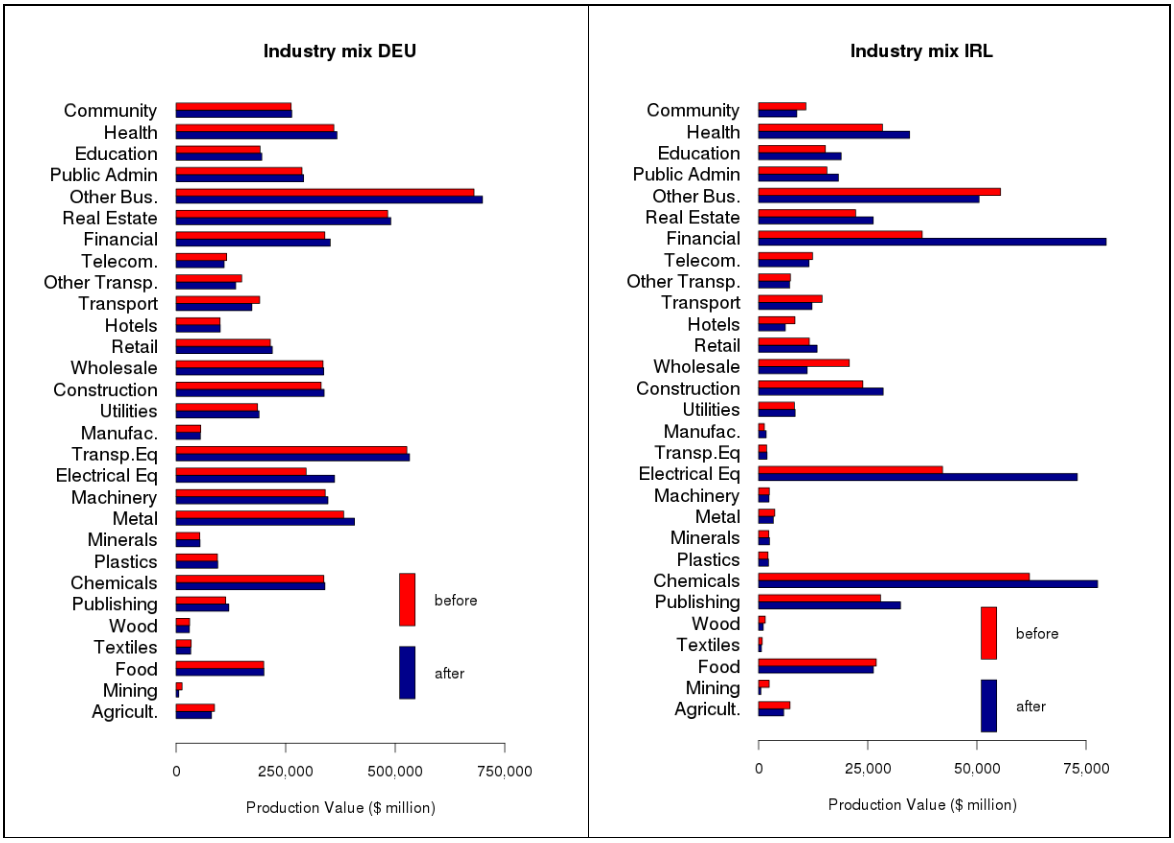
Figure 3: The components of welfare changes



For Ireland, Great Britain and the USA, the overall welfare gain is due to a strong increase in wages which overcompensates rising goods and land prices. The positive real income effects in most Northern and Western EU countries, such as Luxembourg, the Netherlands, Belgium, Denmark, Italy, France, and Spain are driven by both wage gains and falling goods prices. Several Eastern and Southeastern European countries, on the other hand, experience falling wages that are overcompensated by drastic price and land rent reductions. Finally, falling prices both for goods and for land also buffer the negative effects of trade diversion in third party countries, resulting in only minimal welfare losses. In the case of India and Australia, who compensate trade losses by increasing their bilateral ties, falling prices even lead to overall real income gains despite reduced wages.

Industry effects. We have also looked at the changes in the industry mix (measured by production values) that is implied by transatlantic trade liberalization. Figure 4 reports the results on industry mix, again under the assumption of the most ambitious liberalization path. Germany is representative for many other countries in that there is only little effect on the industry mix. As can be seen, there are only very small effects, if any, in most of the industries. The strongest changes occur in electrical equipment and metal which would thrive under transatlantic trade liberalization whilst telecommunications, transport, other transport activities, mining and agriculture shrink. Ireland, which would be the overall winner in welfare terms, experiences strong effects, in some industries, however. Financial, electrical equipment and chemical products (including pharmaceuticals) would experience a strong boost.

Figure 4: Effects on the industry mix: Germany vs. Ireland



The role of land. A key innovation of our analysis in relation to previous studies of transatlantic trade liberalization is that we integrate land, notably as a consumption good, but also as a production factor. This has important consequences, as can already be seen from the following theoretical thought experiment. Suppose that land is only used for housing purposes, but not as an input in production ($\eta_{nk} = 0$). It then follows immediately from (14) and (17) that $\hat{r}_n = \hat{v}_n$ and from (17) that $\hat{V}_n = \left(\hat{v}_n / \hat{P}_n\right)^{\alpha}$. Ignoring land in consumption ($\alpha = 1$) would thus lead to an overestimation of the welfare effects of the magnitude $(1 - \alpha)/\alpha$. For plausible values of the share of land in consumption of 1/4, disregarding land in consumption hence implies an overestimation of real income effects in the range of 1/3.

Turning to the full model with land used as a consumption good and as an input in production, our numerical analyses suggest that real income effects of plausible TTIP-scenarios would be overestimated by about 33% percent (see table 4 in the appendix). These simulations also reveal that the effects of disregarding land in production are by several magnitudes smaller compared to omitting land for housing.[7]

The upshot of this section is that studies which disregard land are prone to overestimate the static real income effects of transatlantic trade liberalization. This difference explains at the same time, why we find more limited effects than previous analyses. It should also be pointed out that, by highlighting the role of land, our analysis also contributes to the more general discussion of the sensitivity of the new quantitative trade models to auxiliary assumptions (see Costinot and Rodriguez-Claré 2014, section 5).

4.2 The local perspective: Germany

Awareness of the local labor market consequences of shifts in the global economy has been growing recently both in public and in academics (see e.g. Autor et al. 2013; Dauth et al. 2014; Moretti 2010). Public concern over transatlantic trade liberalization is similarly strong, in particular in Europe. It is therefore important to explore how local labor markets within countries are affected by a transatlantic deal. We take Germany as a case in point and trace the effects of trade liberalization down to the local level.

Data. For this purpose we use value added data from national accounts which is available on the regional level from the German federal and state statistical offices ("Regionaldatenbank der Statistischen Ämter des Bundes und der Länder"). This data is available for all 402 regions

7 The effects become more pronounced, however, in the regime with population mobility, but still small compared to the effects derived omitting land in consumption.

(“Kreise”) disaggregated into 6 groups of NACE/ISIC industries which match directly with WIOD industries as can be seen in table 4 in the appendix. We label these sectors “Agriculture”, “Manufacturing”, which includes mining and raw materials, “Construction”, “Trade”, which includes transportation and tourism, “Financial” and “Government”, which includes health and education. Assuming that the German input output structure holds for all German regions we can use our data to rewrite the World Input Output table in terms of our new 6 sectors and including 402 German regions instead of the country as a whole. This method is explained in detail in section A2 in the appendix.

Descriptive evidence. The initial heterogeneity in the industry mix across locations is portrayed in Fig. A1 in the appendix. Regions in the Northwest and in the Northeast of Germany have the strongest focus on agriculture, though no region produces much more than 10% of its value added in this sector. Manufacturing, in contrast, is of bigger importance for locations in the South of Germany and especially for regions in which 3 major car manufacturers (VW, BMW and Mercedes) are active. In these locations it can be responsible for more than 80% of value added. The trade sector, which includes transportation, is most important for those regions that are close to the two major German airports (Frankfurt and Munich) or have large ports, like Hamburg.[8] In and around Frankfurt where several important German banks, the largest German stock market and the German central bank are located, the financial sector plays a crucial role being responsible for up to 50% of total value added in these regions. The share of government tasks, including health and education, in value added is strongest in regions that consist of only one large city, and, in general, in the Northeast of Germany.

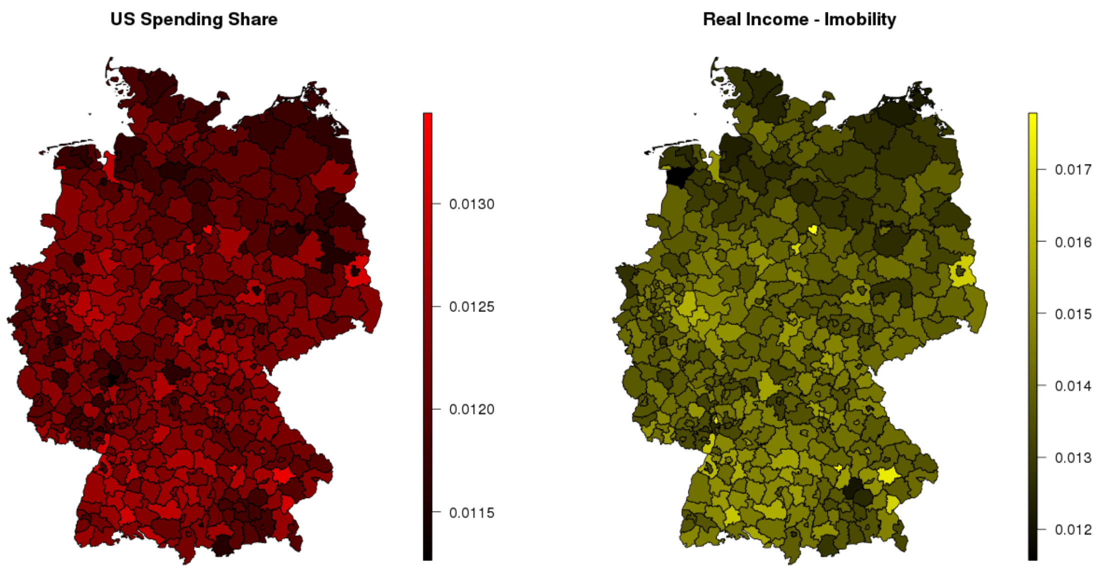
We can also look at how important regions are for Germany as a whole. Fig. A2 in the appendix gives the share of a region’s value added in a specific industry relative to Germany’s value added in this industry. The largest producers in the agricultural sector are found in the Northwestern regions. All other sectors are, with some exceptions, dominated by the highly populated regions Berlin, Hamburg, Munich, “Region Hannover”, and Cologne (all above one million inhabitants).

Transatlantic trade liberalization. We begin by calculating the effects of a 25% barrier reduction between the US and all EU members without population mobility in order to show the heterogeneity of expected real income changes. The initial spending shares on US goods and the real income effects from the policy experiment on regions are shown in Figure 5. It is

8 The bright outlier in the north west of Germany is „Landkreis Leer“, which has the second largest concentration of shipping companies after Hamburg.

clear to see, that the initial share of a countries total spending on US goods (both final and intermediate) is again a very good indicator for its real income changes due to the barrier reduction. A key finding of our calculations is that despite their heterogeneity all regions win. This is remarkable, because our model, in principle, allows for negative welfare effects through terms of trade movements which work through wage adjustments across locations. The fear that TTIP might benefit only the already rich German locations at the cost of the poor ones is not supported by our analysis. Yet even in our ambitious scenario the potential gains are limited to between 1.1 and 1.8 percent of real income (figure A3 in the appendix provides a disaggregation of the real income effects).

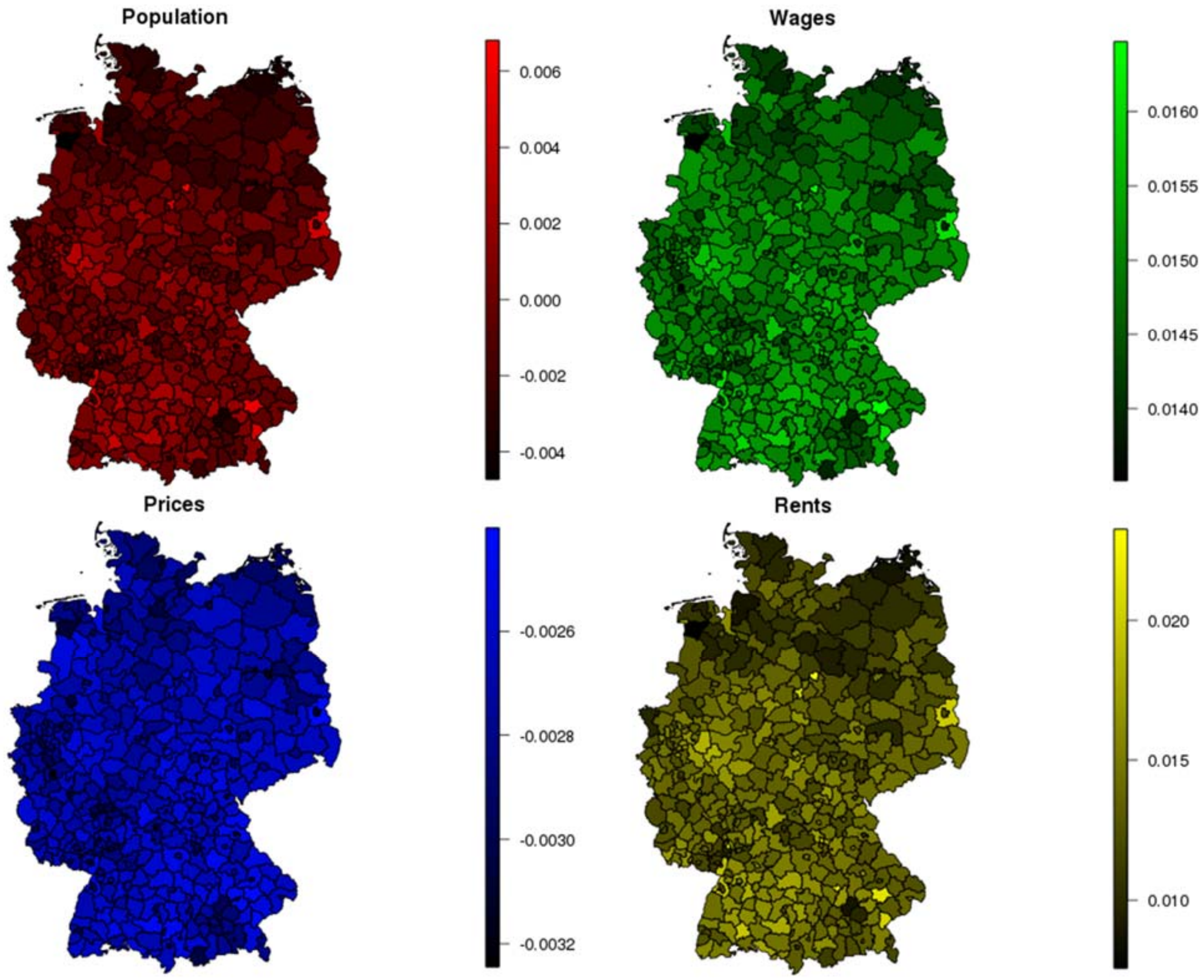
Figure 5: Initial US Spending Shares and Real Income Changes



We show more detailed results for the case with population mobility among German regions (i.e. only in Germany not between other EU members) in Figure 6 below. Due to the low real income effects observed under population immobility the incentive to move is limited. The forecasted effects on population are consequently only in the range of -0.46% to 0.67%, despite our assumption of perfect mobility. The fear that individual German regions could experience strong population losses due to a restructuring thus also seems unwarranted.

Wage gains are strongest in the South and West, as well as in the car manufacturing centers. Price drops are strongest in the vicinity of large cities and in regions that specialize in the financial or trade sector. However, effects for both prices and wages are very low, and heterogeneity even more so. Rents increase everywhere, but more in the south and west where population increases and thus drives demand for land.

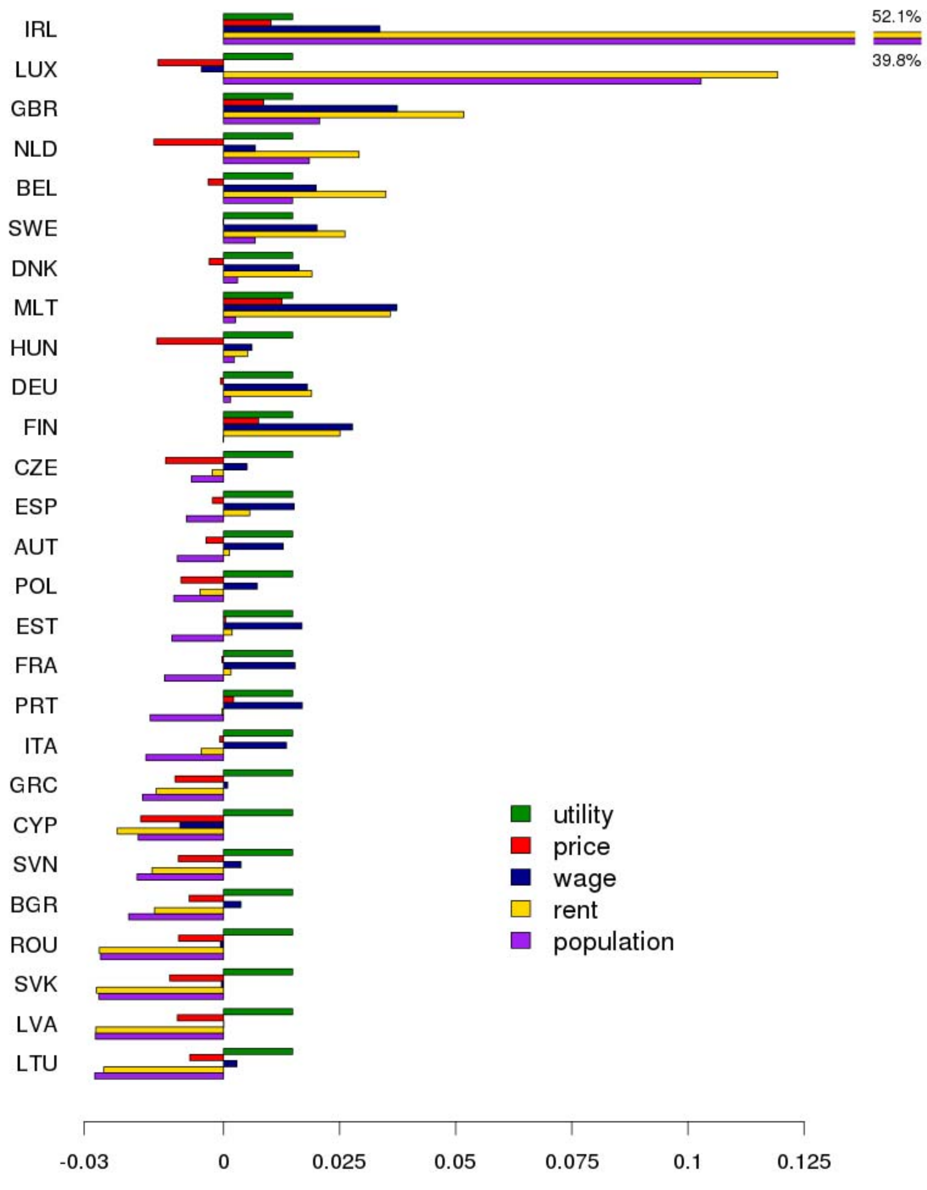
Figure 6: Detailed effects of 25% barrier reduction with population mobility



4.3 Population mobility in Europe

Figure 7 portrays our findings under the assumption of full labor mobility in the EU. It should be noted that our model captures only one dispersion force, scarce land, and hence land prices. Clearly, there are further forces which reduce labor mobility in Europe, in particular heterogeneous location preferences and a plethora of mobility costs. The results in this section should therefore be seen as an extreme scenario, just as the no mobility case (depicted in figure 1) goes to the other extreme. The establishment of a spatial equilibrium in the mentioned extreme case would level all income gains at just below 1.5% in all EU members. Ireland and Luxembourg would experience a strong inflow of labor followed, with an already much weaker inflow, by Great Britain, the Netherlands, Belgium, and Sweden. This inflow immensely reduces wages in these countries, but thereby also lowers production costs and consequently leads to much lower price increases as compared to the no-mobility case in figure 1. A close inspection of figure 7 reveals that the bulk of the adjustment to the spatial equilibrium within the European Union takes place through the adjustment of land prices.

Figure 7: Welfare effects in European countries, with labor mobility



4.4 TTIP versus multilateral trade liberalization

An important concern regarding TTIP is that it may undermine the global trading system (Bagwell et al. 2014; Bhagwati et al. 2014; Panagariya 2013). Our analysis has in fact identified countries that lose due to trade diversion. An alternative to regional engagements would be to bring in more effort into the trade talks at the multilateral level, which are currently stalling. What level of multilateral trade liberalization would have to be achieved in order to match the real income effects that the European Union and the United States derive from a transatlantic deal? Redoing our calculations for a multilateral trade barrier reduction we find that the answer differs considerably between the two locations[9]. A multilateral reduction of trade barriers in the range of 4% to 5% would be enough for Europe[10] to achieve the same welfare gains as in our most ambitious TTIP scenario. For the US, however, this would require a decrease in multilateral barriers of 11% to 12%. This level of reductions seems out of reach for multilateral negotiations that generally focus on tariffs alone. Consequently, the US appears to gain more from TTIP in comparison to a multilateral agreement, while the same does not necessarily hold true for the EU. This finding points to the importance of the Bhagwati's (1994) prediction that a 'hegemonic power' is likely to gain more by bargaining sequentially than simultaneously. Hence, TTIP might indeed harm the multilateral trading system by diverting the political energy of one of its key players, the US, away from WTO negotiations.

4.5 Discussion: How deep … ?

Both our model and our empirical strategy differ from earlier studies of the transatlantic trade partnership. This section briefly puts our results in perspective to previous research.

The difficulties in the ongoing negotiating process between the EU and the US make it impossible to know how 'deep' a final trade agreement is going to be and how the various sectors will be affected. However, even if we knew the final outcome (e.g. the harmonization of standards in the car industry or agreements on the testing of pharmaceutical or medical products), there is no simple way to translate these (reductions of) barriers into tariff equivalents. The previous literature has dealt with this issue in two different ways. One line has followed a 'bottom-up' approach and has indeed tried to figure out tariff equivalents. This has led to widely differing results, however. The table below lists the findings that two of the most influential studies have obtained, Ecorys (2009) on which the study of Francois et al. (2013) for the EU commission is based, and Fontagné et al. (2013). The number are confined to the three broad sectors agriculture, manufacturing and services.

Table 1: Estimated tariff equivalents

	Ecorys (2013) US → EU	EU → US	Fontagné et al. (2013) US → EU	EU → US
agriculture	56.8	73.3	48.2	51.3
manufacturing	19.3	23.4	42.8	32.3
services	8.5	8.9	32.0	47.3

9 See table 7 in the appendix for detailed results.

10 In the case without population mobility this value, of course, varies across EU member states. However, as can be seen in table 6 in the appendix it remains in the range of 4% to 5% for most, including Germany.

In view of the problems and discrepancies, Felbermayr et al. (2013) go so far to argue that no consistent and reliable quantification is possible on the sectoral level. Felbermayr et al. (2013; 2014) and Aichele et al. (2014) use an alternative 'top down approach' whereby estimates of the effects of existing trade agreements on bilateral trade volumes in different industries are used to calibrate the TTIP shock to result in these volume changes. Hence instead of providing a range of conceivable reductions up to an upper bound, as we do, they pick a particular scenario for their welfare calculations. This has the advantage that it allows for shocks to vary across industries which opens a further channel for welfare effects. On the other hand, their predictions can only be as good as their scenario represents the outcome of the TTIP negotiations, or as good as TTIP remains an "average" trade agreement.

Turning to the results, our estimated welfare effects are within the range of results reported in the CGE based studies by Francois (2013) and slightly higher than those reported in Fontagné (2013), all methodological differences notwithstanding. The one-sector new quantitative trade study by Felbermayr et al. (2014) reports significantly higher welfare effects than we do. They find that the EU 28 would achieve a welfare gain of 3.9 % and the United States of 4.9 % while the welfare loss that they compute for the rest of the world is -0.9%. Aichele et al. (2014) which draws a Ricardian multi-industry model, also forecasts higher welfare gains than we do, with 2.7% for the US and 2.1% for the EU.

Felbermayr et al. (2013) report that the member states at the EU periphery benefit most. This corresponds to our finding with respect to Ireland. However, we also find that a country at the geographic center, Luxembourg, would derive extremely strong benefits. Felbermayr et al. (2013), on the other hand, find that Spain would derive strong gains in the range of 5.6 % which is strongly at odds with our findings and which is also hard to understand given the small share of spending that Spain devotes to US goods and services (cf. figure 2.). There are some further differences. Whereas trade diversion effects appear to play little role in Fontagné (2013), they are clearly visible in other studies and, for very good reasons, very prominent for Taiwan, Korea, Russia, Mexico, China, and Canada in our analysis.

What explains these different results? Clearly, part is due to the fact that the estimates are based on different models which differ along several choices. Our analysis points to the importance of land in consumption and production and suggests that a disregard of land may imply an overestimation of the real income gains in the range of 33%. A second important reason for the difference in results is due to the fact that different liberalization scenarios are considered.

The top down approach pursued by Aichele et al (2014) can easily be related to our analysis (see table A5 in the appendix). Their estimate of previous trade agreements implies that TTIP would result in very large barrier reductions for agriculture and car manufacturing (barriers fall by more than 50% in both), as well as food and textiles (both above 30%) but have much lower effects in the remaining industries and especially low effects in service industries (0.7% to 7.3%). After matching their industry classification to ours we find the following.11 First, the high gains of Ireland and Luxembourg are brought down significantly. This is largely due to the much smaller cut in trade barriers that Aichele et al. (2014) predict for the service industries from which these two countries derive the main benefits. Second, for Germany the real income effect is almost identical to our extreme scenario, despite the lower barrier reductions in most sectors. The main driver of these gains is the huge predicted trade barrier reduction of more than 50% in the car manufacturing sector, on which Germany relies heavily. Third, the average long term effects for the EU with population mobility would be a real income gain of 1.15% and thus lower than for the upper bound estimate of our across the board reduction (1.49%). Our main result that effects are low except for some industries in some countries, remains intact, however.

5 Conclusion

This paper is the first to set up a *new quantitative spatial trade model* and to employ the method of Dekle et al. (2007) to evaluate the quantitative consequences of the liberalization of transatlantic trade associated with the envisioned EU-US trade and investment partnership. The advantage of this approach is that we do not need information on the initial trade cost matrix to perform our numerical analysis. The trade costs are extremely hard to quantify since the most important outstanding trade barriers are of non-tariff nature. Previous analyses have obtained widely differing results for the tariff equivalents of these barriers and hence, are plagued by considerable uncertainties. Our approach allows us to circumvent this problem since these parameters are already embedded in the baseline specification. With our method it is easy to establish the real income effects for a whole range of trade cost reductions.

We provide new perspectives by highlighting the role of land for the estimation of real income effects, by looking at local labor markets and by addressing the mobility of labor. Our results have to be seen against the background of three important caveats. First, for Europe we study a scenario both with no labor mobility and one with labor mobility hindered only by changing

11 We provide detailed information in a supplementary appendix.

land prices. Both these scenarios are to be thought of as the extreme limiting cases. Second, our analysis sheds only light on static gains from trade liberalization but not on the likely follow-up effects associated with induced capital accumulation and dynamic growth effects. Third, our approach, like previous attempts, does not embrace welfare effects associated with FDI. Hence, our results would have to be scaled up. Future research is needed to embed FDI in the new quantitative trade models to obtain more accurate overall welfare effects for the investment part of this (and any other) agreement.

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Appendix

Material in the Supplementary Appendix – Not for publication

Table A1: List of sectors

WIOD Sector	Label	New Sector	Label
1	Agriculture, Hunting, Forestry and Fishing	1	Agricult.
2	Mining and Quarrying	2	Mining
3	Food, Beverages and Tobacco	3	Food
4	Textiles and Textile Products	4	Textiles
5	Leather, Leather and Footwear		
6	Wood and Products of Wood and Cork	5	Wood
7	Pulp, Paper, Paper , Printing and Publishing	6	Publishing
8	Coke, Refined Petroleum and Nuclear Fuel	7	Chemicals
9	Chemicals and Chemical Products		
10	Rubber and Plastics	8	Plastics
11	Other Non-Metallic Mineral	9	Minerals
12	Basic Metals and Fabricated Metal	10	Metal
13	Machinery, Nec	11	Machinery
14	Electrical and Optical Equipment	12	Electrical Eq
15	Transport Equipment	13	Transp. Eq
16	Manufacturing, Nec; Recycling	14	Manufac.
17	Electricity, Gas and Water Supply	15	Utilities
18	Construction	16	Construction
19	Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; Retail Sale of Fuel	17	Wholesale
20	Wholesale Trade and Commission Trade, Except of Motor Vehicles and Motorcycles		
21	Retail Trade, Except of Motor Vehicles and Motorcycles; Repair of Household Goods	18	Retail
22	Hotels and Restaurants	19	Hotels
23	Inland Transport	20	Transport
24	Water Transport		
25	Air Transport		
26	Other Supporting and Auxiliary Transport Activities; Activities of Travel Agencies	21	Other Transp.
27	Post and Telecommunications	22	Telecom.
28	Financial Intermediation	23	Financial
29	Real Estate Activities	24	Real Estate
30	Renting of M&Eq and Other Business Activities	25	Other Bus.
31	Public Admin and Defence; Compulsory Social Security	26	Public Admin
32	Education	27	Education
33	Health and Social Work	28	Health
34	Other Community, Social and Personal Services	29	Community
35	Private Households with Employed Persons		

Source: WIOD Database

Table A2: Country sample

Code	Country	Code	Country	Code	Country
AUS	Australia	FRA	France	MLT	Malta
AUT	Austria	GBR	Great Britain	NLD	Netherlands
BEL	Belgium	GRC	Greece	POL	Poland
BGR	Bulgaria	HUN	Hungary	PRT	Portugal
BRA	Brazil	IDN	Indonesia	ROU	Romania
CAN	Canada	IND	India	RUS	Russia
CHN	China	IRL	Ireland	SVK	Slovakia
CYP	Cyprus	ITA	Italy	SVN	Slovenia
CZE	Czech Republic	JPN	Japan	SWE	Sweden
DEU	Germany	KOR	Korea	TUR	Turkey
DNK	Denmark	LTU	Lithuania	TWN	Taiwan
ESP	Spain	LUX	Luxemburg	USA	United States of America
EST	Estonia	LVA	Latvia	ROW	Rest of World
FIN	Finland	MEX	Mexico		

Source: WIOD Database

Table A3: Detailed effects of a 25% trade barrier reduction

	real income		prices		wages		rents		popula-tion
	immobile	mobile	immobile	mobile	immobile	mobile	immobile	mobile	mobile
AUS	0,43%	0,43%	-0,52%	-0,61%	0,08%	0,00%	-0,08%	-0,16%	0,00%
AUT	1,08%	1,49%	-0,36%	-0,38%	1,07%	1,29%	0,93%	0,13%	-1,00%
BEL	2,09%	1,49%	-0,14%	-0,33%	2,54%	1,99%	2,50%	3,50%	1,49%
BGR	0,52%	1,49%	-0,83%	-0,74%	-0,17%	0,38%	-0,07%	-1,49%	-2,04%
BRA	-0,03%	-0,03%	-1,16%	-1,24%	-1,20%	-1,28%	-1,17%	-1,26%	0,00%
CAN	-0,18%	-0,18%	-1,20%	-1,28%	-1,46%	-1,53%	-1,32%	-1,40%	0,00%
CHN	-0,21%	-0,21%	-1,82%	-1,90%	-2,01%	-2,08%	-1,98%	-2,05%	0,00%
CYP	0,54%	1,49%	-1,92%	-1,78%	-1,49%	-0,94%	-1,14%	-2,29%	-1,84%
CZE	1,21%	1,49%	-1,22%	-1,25%	0,36%	0,51%	0,33%	-0,24%	-0,69%
DEU	1,55%	1,49%	0,04%	-0,07%	1,95%	1,80%	1,88%	1,89%	0,15%
DNK	1,60%	1,49%	-0,20%	-0,31%	1,80%	1,63%	1,77%	1,90%	0,30%
ESP	1,13%	1,49%	-0,24%	-0,24%	1,34%	1,52%	1,18%	0,56%	-0,80%
EST	1,07%	1,49%	0,07%	0,04%	1,46%	1,69%	1,12%	0,18%	-1,11%
FIN	1,49%	1,49%	0,86%	0,75%	2,88%	2,78%	2,62%	2,51%	-0,01%
FRA	0,92%	1,49%	-0,07%	-0,03%	1,20%	1,54%	1,10%	0,16%	-1,27%
GBR	2,33%	1,49%	1,02%	0,86%	4,34%	3,74%	3,64%	5,17%	2,07%
GRC	0,61%	1,49%	-1,16%	-1,04%	-0,42%	0,09%	-0,32%	-1,45%	-1,75%
HUN	1,61%	1,49%	-1,32%	-1,44%	0,82%	0,61%	0,48%	0,52%	0,23%
IDN	-0,06%	-0,06%	-1,48%	-1,57%	-1,52%	-1,61%	-1,49%	-1,58%	0,00%
IND	0,30%	0,30%	-1,62%	-1,70%	-1,30%	-1,37%	-1,10%	-1,16%	0,00%
IRL	13,61%	1,49%	3,76%	1,02%	16,83%	3,37%	19,40%	52,08%	39,80%
ITA	0,76%	1,49%	-0,13%	-0,08%	0,93%	1,35%	0,78%	-0,48%	-1,67%
JPN	-0,05%	-0,05%	-1,63%	-1,72%	-1,70%	-1,78%	-1,68%	-1,76%	0,00%
KOR	-0,26%	-0,27%	-1,63%	-1,72%	-1,87%	-1,96%	-1,83%	-1,92%	0,00%
LTU	0,27%	1,49%	-0,86%	-0,73%	-0,49%	0,29%	-0,60%	-2,58%	-2,78%
LUX	4,19%	1,49%	-0,45%	-1,41%	3,45%	-0,48%	4,24%	11,93%	10,28%
LVA	0,27%	1,49%	-1,17%	-0,99%	-0,82%	0,01%	-0,83%	-2,75%	-2,76%
MEX	-0,22%	-0,22%	-1,72%	-1,81%	-2,02%	-2,11%	-1,90%	-1,99%	0,00%
MLT	1,59%	1,49%	1,35%	1,26%	3,87%	3,73%	3,45%	3,59%	0,26%
NLD	2,16%	1,49%	-1,31%	-1,50%	1,32%	0,68%	1,61%	2,92%	1,85%
POL	1,03%	1,49%	-0,91%	-0,92%	0,48%	0,73%	0,32%	-0,51%	-1,07%
PRT	0,73%	1,49%	0,14%	0,22%	1,26%	1,69%	1,07%	-0,04%	-1,58%
ROU	0,27%	1,49%	-1,11%	-0,97%	-0,79%	-0,07%	-0,83%	-2,68%	-2,65%
RUS	-0,25%	-0,25%	-1,71%	-1,80%	-1,88%	-1,98%	-1,87%	-1,97%	0,00%
SVK	0,34%	1,49%	-1,28%	-1,16%	-0,82%	-0,04%	-0,80%	-2,74%	-2,69%
SVN	0,69%	1,49%	-1,03%	-0,97%	-0,11%	0,38%	-0,16%	-1,54%	-1,86%
SWE	1,75%	1,49%	0,13%	-0,01%	2,32%	2,01%	2,20%	2,61%	0,68%
TUR	0,04%	0,05%	-1,10%	-1,17%	-1,17%	-1,24%	-1,07%	-1,14%	0,00%
TWN	-0,54%	-0,54%	-1,97%	-2,06%	-2,40%	-2,50%	-2,43%	-2,53%	0,00%
USA	1,74%	1,77%	0,61%	0,56%	3,07%	3,06%	3,01%	3,00%	0,00%
RoW	-0,13%	-0,12%	-1,38%	-1,48%	-1,62%	-1,71%	-1,46%	-1,55%	0,00%

Table A4: The significance of land

	25% barrier reduction - no mobility - change in real income					
	no land	land in consumption and production	difference to no land	housing only in consumption	difference to no land	additional housing in production effect
AUS	0,576%	0,432%	33,4%	0,431%	33,5%	0,0002%
AUT	1,438%	1,077%	33,5%	1,076%	33,6%	0,0010%
BEL	2,791%	2,087%	33,7%	2,086%	33,8%	0,0012%
BGR	0,693%	0,518%	33,8%	0,519%	33,5%	-0,0010%
BRA	-0,038%	-0,028%	34,5%	-0,028%	34,5%	0,0000%
CAN	-0,239%	-0,180%	32,8%	-0,180%	33,1%	-0,0004%
CHN	-0,273%	-0,205%	32,9%	-0,205%	33,1%	-0,0004%
CYP	0,722%	0,541%	33,6%	0,541%	33,5%	-0,0002%
CZE	1,623%	1,214%	33,7%	1,215%	33,6%	-0,0008%
DEU	2,070%	1,551%	33,5%	1,549%	33,7%	0,0020%
DNK	2,141%	1,602%	33,6%	1,601%	33,7%	0,0011%
ESP	1,510%	1,131%	33,5%	1,131%	33,6%	0,0005%
EST	1,427%	1,071%	33,2%	1,068%	33,6%	0,0032%
FIN	1,983%	1,485%	33,5%	1,483%	33,7%	0,0021%
FRA	1,235%	0,925%	33,6%	0,925%	33,6%	0,0001%
GBR	3,116%	2,331%	33,7%	2,328%	33,8%	0,0029%
GRC	0,820%	0,615%	33,4%	0,615%	33,4%	0,0001%
HUN	2,144%	1,609%	33,2%	1,603%	33,7%	0,0058%
IDN	-0,080%	-0,060%	32,8%	-0,060%	33,3%	-0,0002%
IND	0,400%	0,299%	33,6%	0,300%	33,4%	-0,0005%
IRL	18,426%	13,611%	35,4%	13,524%	36,2%	0,0876%
ITA	1,019%	0,764%	33,3%	0,764%	33,5%	0,0007%
JPN	-0,066%	-0,049%	33,7%	-0,050%	33,1%	0,0002%
KOR	-0,347%	-0,261%	33,1%	-0,260%	33,4%	-0,0007%
LTU	0,364%	0,274%	32,9%	0,273%	33,3%	0,0009%
LUX	5,593%	4,192%	33,4%	4,166%	34,3%	0,0256%
LVA	0,364%	0,273%	33,5%	0,273%	33,3%	-0,0004%
MEX	-0,286%	-0,215%	33,0%	-0,215%	33,1%	-0,0001%
MLT	2,129%	1,592%	33,8%	1,592%	33,7%	-0,0005%
NLD	2,896%	2,161%	34,0%	2,164%	33,8%	-0,0030%
POL	1,376%	1,031%	33,4%	1,030%	33,5%	0,0007%
PRT	0,972%	0,728%	33,5%	0,728%	33,5%	0,0000%
ROU	0,365%	0,274%	33,2%	0,274%	33,2%	0,0001%
RUS	-0,326%	-0,246%	32,6%	-0,245%	33,1%	-0,0011%
SVK	0,461%	0,344%	34,1%	0,345%	33,5%	-0,0015%
SVN	0,921%	0,689%	33,6%	0,690%	33,5%	-0,0002%
SWE	2,340%	1,752%	33,6%	1,750%	33,7%	0,0024%
TUR	0,060%	0,045%	33,5%	0,045%	33,4%	0,0000%
TWN	-0,712%	-0,536%	32,7%	-0,535%	33,2%	-0,0017%
USA	2,328%	1,740%	33,8%	1,741%	33,7%	-0,0011%
RoW	-0,170%	-0,128%	32,6%	-0,127%	33,5%	-0,0008%

Table A5: Detailed effects of a 25% trade barrier reduction, alternative scenarios

	Scenario from Aichele et al. (2014)				Autarky			
	immobile				immobile			
	real income	prices	wages	rents	real income	prices	wages	rents
AUS	0,36%	-0,87%	-0,43%	-0,18%	-6,79%	6,48%	-3,09%	-2,92%
AUT	0,63%	-0,46%	0,42%	0,13%	-22,61%	41,14%	0,30%	0,23%
BEL	1,28%	-0,47%	1,18%	1,19%	-30,45%	66,48%	2,59%	2,55%
BGR	1,02%	-0,83%	0,51%	0,82%	-18,84%	30,23%	-1,17%	-2,48%
BRA	-0,04%	-0,86%	-0,88%	-1,01%	-3,34%	4,70%	0,17%	-0,39%
CAN	0,00%	-0,50%	-0,49%	-0,57%	-10,44%	13,72%	-1,84%	-1,81%
CHN	-0,16%	-1,31%	-1,45%	-1,48%	-4,30%	8,70%	2,51%	2,52%
CYP	1,13%	1,04%	2,83%	3,75%	-18,06%	28,84%	-0,88%	-2,59%
CZE	0,68%	-1,03%	-0,05%	-0,44%	-20,52%	39,99%	2,94%	3,65%
DEU	1,42%	-0,65%	1,18%	0,92%	-11,83%	21,50%	2,57%	3,34%
DNK	0,79%	-0,01%	1,01%	0,79%	-17,83%	34,46%	3,49%	3,51%
ESP	1,21%	-0,92%	0,73%	0,58%	-9,03%	13,10%	-0,26%	-0,51%
EST	0,77%	-0,04%	1,03%	0,44%	-19,89%	37,75%	2,58%	2,10%
FIN	0,76%	0,41%	1,49%	1,11%	-10,66%	19,57%	2,82%	3,18%
FRA	1,00%	-0,76%	0,62%	0,36%	-9,89%	14,30%	-0,46%	-0,73%
GBR	1,57%	0,05%	2,10%	2,43%	-11,71%	17,25%	-0,61%	-0,97%
GRC	0,70%	-1,24%	-0,38%	-0,29%	-10,16%	12,98%	-1,73%	-3,38%
HUN	0,53%	-1,26%	-0,33%	-1,31%	-25,58%	52,36%	2,82%	2,51%
IDN	-0,05%	-1,01%	-1,02%	-1,16%	-6,97%	7,57%	-2,38%	-2,03%
IND	0,20%	-1,22%	-0,92%	-1,18%	-4,96%	5,25%	-1,45%	-2,44%
IRL	4,40%	0,65%	4,91%	5,19%	-22,19%	48,15%	5,82%	6,88%
ITA	0,92%	-0,74%	0,57%	0,09%	-7,78%	13,52%	1,90%	1,88%
JPN	-0,03%	-1,13%	-1,16%	-1,15%	-2,69%	4,69%	0,93%	1,05%
KOR	-0,19%	-1,12%	-1,30%	-1,28%	-8,74%	24,49%	10,03%	10,99%
LTU	0,52%	-1,93%	-1,12%	-1,87%	-13,55%	23,68%	2,17%	0,53%
LUX	1,20%	-1,84%	-0,14%	-0,39%	-76,77%	859,43%	37,53%	34,91%
LVA	0,42%	-0,66%	-0,10%	-0,08%	-21,54%	36,28%	-1,14%	-2,38%
MEX	-0,09%	-1,00%	-1,09%	-1,27%	-10,72%	13,12%	-2,76%	-2,74%
MLT	1,61%	0,01%	2,37%	2,14%	-50,00%	156,52%	2,19%	0,22%
NLD	1,84%	0,31%	2,24%	3,49%	-20,89%	43,55%	4,98%	5,24%
POL	0,51%	-1,55%	-0,73%	-1,44%	-15,47%	27,09%	1,57%	1,61%
PRT	1,11%	-1,33%	0,24%	-0,25%	-13,34%	18,17%	-2,28%	-2,74%
ROU	0,35%	-2,35%	-1,80%	-2,95%	-10,35%	12,65%	-2,45%	-3,36%
RUS	0,03%	-0,58%	-0,49%	-0,55%	-11,39%	10,95%	-5,63%	-5,31%
SVK	0,12%	-1,24%	-0,97%	-1,40%	-21,21%	41,44%	2,94%	2,90%
SVN	0,49%	-1,02%	-0,32%	-0,61%	-24,74%	47,02%	0,62%	0,72%
SWE	0,96%	-0,24%	1,07%	0,51%	-12,14%	22,13%	2,70%	3,03%
TUR	0,02%	-0,96%	-1,01%	-1,08%	-12,17%	16,07%	-2,29%	-2,68%
TWN	-0,45%	-1,52%	-1,87%	-2,07%	-12,50%	36,71%	14,31%	14,85%
USA	1,31%	0,31%	2,10%	2,33%	-4,16%	5,20%	-0,48%	-1,06%
RoW	-0,04%	-0,73%	-0,77%	-0,95%	-11,23%	14,31%	-2,57%	-2,08%

Table A6: Multilateral Liberalization - no mobility

Real income effects for different level of multilateral trade barrier reductions

Reduction:	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
AUS	0,20%	0,42%	0,64%	0,88%	1,12%	1,38%	1,66%	1,95%	2,25%	2,58%
AUT	0,41%	0,84%	1,28%	1,74%	2,22%	2,71%	3,23%	3,77%	4,33%	4,91%
BEL	0,56%	1,14%	1,75%	2,37%	3,02%	3,68%	4,38%	5,09%	5,84%	6,61%
BGR	0,40%	0,83%	1,28%	1,74%	2,24%	2,75%	3,30%	3,87%	4,47%	5,10%
BRA	0,10%	0,22%	0,34%	0,46%	0,60%	0,74%	0,89%	1,06%	1,23%	1,42%
CAN	0,27%	0,56%	0,86%	1,18%	1,51%	1,86%	2,22%	2,61%	3,01%	3,42%
CHN	0,15%	0,30%	0,46%	0,64%	0,82%	1,01%	1,22%	1,44%	1,68%	1,93%
CYP	0,26%	0,53%	0,82%	1,11%	1,42%	1,74%	2,08%	2,42%	2,79%	3,16%
CZE	0,56%	1,14%	1,75%	2,38%	3,04%	3,73%	4,44%	5,18%	5,96%	6,77%
DEU	0,30%	0,62%	0,95%	1,29%	1,65%	2,02%	2,41%	2,81%	3,23%	3,67%
DNK	0,37%	0,75%	1,15%	1,55%	1,97%	2,41%	2,86%	3,33%	3,82%	4,32%
ESP	0,21%	0,43%	0,66%	0,90%	1,15%	1,41%	1,68%	1,97%	2,26%	2,57%
EST	0,43%	0,88%	1,34%	1,82%	2,31%	2,82%	3,34%	3,88%	4,44%	5,02%
FIN	0,30%	0,62%	0,95%	1,30%	1,66%	2,04%	2,44%	2,86%	3,29%	3,74%
FRA	0,20%	0,41%	0,63%	0,86%	1,10%	1,34%	1,60%	1,87%	2,15%	2,44%
GBR	0,26%	0,53%	0,81%	1,11%	1,41%	1,74%	2,08%	2,43%	2,81%	3,20%
GRC	0,20%	0,41%	0,63%	0,86%	1,11%	1,36%	1,62%	1,90%	2,18%	2,48%
HUN	0,63%	1,28%	1,96%	2,67%	3,40%	4,16%	4,94%	5,76%	6,61%	7,49%
IDN	0,19%	0,39%	0,60%	0,81%	1,04%	1,28%	1,53%	1,80%	2,07%	2,37%
IND	0,15%	0,30%	0,46%	0,63%	0,81%	1,00%	1,20%	1,41%	1,64%	1,88%
IRL	0,92%	1,88%	2,88%	3,92%	4,99%	6,10%	7,26%	8,46%	9,70%	10,99%
ITA	0,20%	0,40%	0,61%	0,84%	1,07%	1,32%	1,58%	1,85%	2,13%	2,43%
JPN	0,10%	0,20%	0,31%	0,43%	0,55%	0,68%	0,81%	0,95%	1,10%	1,26%
KOR	0,34%	0,69%	1,07%	1,46%	1,87%	2,30%	2,75%	3,23%	3,73%	4,25%
LTU	0,36%	0,73%	1,12%	1,53%	1,96%	2,41%	2,87%	3,36%	3,87%	4,40%
LUX	1,36%	2,78%	4,24%	5,75%	7,32%	8,95%	10,63%	12,37%	14,17%	16,03%
LVA	0,34%	0,70%	1,07%	1,46%	1,85%	2,27%	2,69%	3,14%	3,60%	4,08%
MEX	0,25%	0,52%	0,79%	1,08%	1,37%	1,67%	1,99%	2,32%	2,66%	3,00%
MLT	0,59%	1,19%	1,83%	2,49%	3,17%	3,89%	4,63%	5,40%	6,21%	7,04%
NLD	0,46%	0,94%	1,44%	1,96%	2,50%	3,06%	3,64%	4,25%	4,88%	5,54%
POL	0,34%	0,70%	1,07%	1,45%	1,86%	2,28%	2,72%	3,18%	3,66%	4,16%
PRT	0,25%	0,50%	0,77%	1,06%	1,35%	1,66%	1,98%	2,32%	2,67%	3,04%
ROU	0,27%	0,56%	0,86%	1,17%	1,50%	1,84%	2,19%	2,56%	2,95%	3,36%
RUS	0,25%	0,51%	0,78%	1,06%	1,36%	1,66%	1,99%	2,32%	2,67%	3,04%
SVK	0,47%	0,96%	1,48%	2,01%	2,56%	3,13%	3,72%	4,34%	4,98%	5,64%
SVN	0,40%	0,82%	1,26%	1,71%	2,18%	2,66%	3,16%	3,68%	4,22%	4,79%
SWE	0,35%	0,72%	1,10%	1,49%	1,91%	2,34%	2,78%	3,25%	3,73%	4,24%
TUR	0,21%	0,43%	0,67%	0,91%	1,16%	1,43%	1,71%	2,00%	2,31%	2,64%
TWN	0,56%	1,14%	1,74%	2,37%	3,02%	3,69%	4,38%	5,09%	5,83%	6,58%
USA	0,11%	0,23%	0,36%	0,49%	0,64%	0,79%	0,95%	1,12%	1,30%	1,50%
RoW	0,27%	0,55%	0,85%	1,16%	1,48%	1,82%	2,17%	2,53%	2,91%	3,31%

Table A7: Multilateral Liberalization – mobility within the EU

Real income effects for different level of multilateral trade barrier reductions

Reduction:	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%
AUS	0,20%	0,42%	0,64%	0,88%	1,12%	1,38%	1,66%	1,95%	2,25%	2,58%
AUT	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
BEL	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
BGR	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
BRA	0,10%	0,22%	0,34%	0,46%	0,60%	0,74%	0,89%	1,06%	1,23%	1,42%
CAN	0,27%	0,56%	0,86%	1,18%	1,51%	1,86%	2,22%	2,61%	3,01%	3,42%
CHN	0,15%	0,30%	0,46%	0,64%	0,82%	1,02%	1,22%	1,44%	1,68%	1,93%
CYP	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
CZE	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
DEU	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
DNK	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
ESP	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
EST	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
FIN	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
FRA	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
GBR	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
GRC	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
HUN	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
IDN	0,19%	0,39%	0,60%	0,81%	1,04%	1,28%	1,53%	1,80%	2,07%	2,37%
IND	0,15%	0,30%	0,46%	0,63%	0,81%	1,00%	1,20%	1,42%	1,64%	1,88%
IRL	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
ITA	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
JPN	0,10%	0,20%	0,31%	0,43%	0,55%	0,68%	0,81%	0,95%	1,10%	1,26%
KOR	0,34%	0,70%	1,07%	1,46%	1,87%	2,30%	2,75%	3,23%	3,73%	4,25%
LTU	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
LUX	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
LVA	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
MEX	0,25%	0,52%	0,79%	1,08%	1,37%	1,67%	1,99%	2,32%	2,65%	3,00%
MLT	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
NLD	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
POL	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
PRT	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
ROU	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
RUS	0,25%	0,51%	0,78%	1,06%	1,36%	1,66%	1,98%	2,32%	2,67%	3,04%
SVK	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
SVN	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
SWE	0,31%	0,63%	0,97%	1,32%	1,69%	2,07%	2,47%	2,88%	3,31%	3,76%
TUR	0,21%	0,43%	0,67%	0,91%	1,16%	1,43%	1,71%	2,01%	2,31%	2,64%
TWN	0,56%	1,14%	1,74%	2,37%	3,02%	3,69%	4,38%	5,09%	5,83%	6,58%
USA	0,11%	0,23%	0,36%	0,50%	0,64%	0,79%	0,96%	1,13%	1,31%	1,50%
RoW	0,27%	0,56%	0,85%	1,16%	1,49%	1,83%	2,18%	2,54%	2,93%	3,32%

Figure A1: Shares of different industries in the region's total production

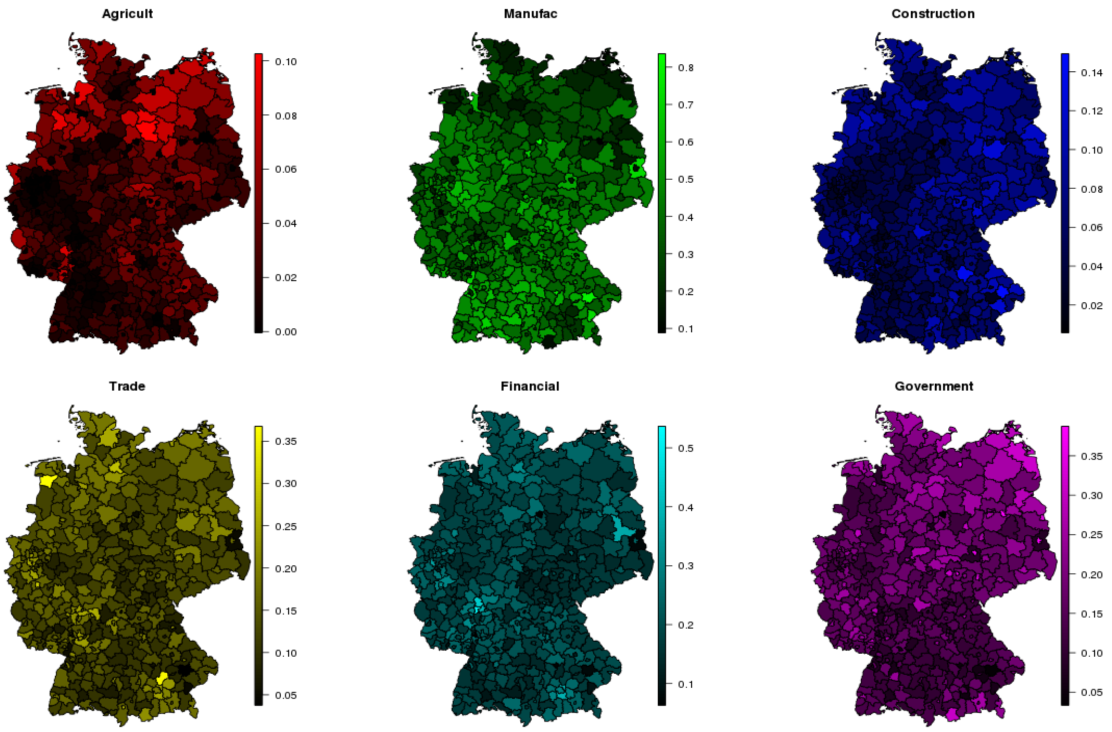


Figure A2: Shares of a regions' industry production in Germany's total industry production

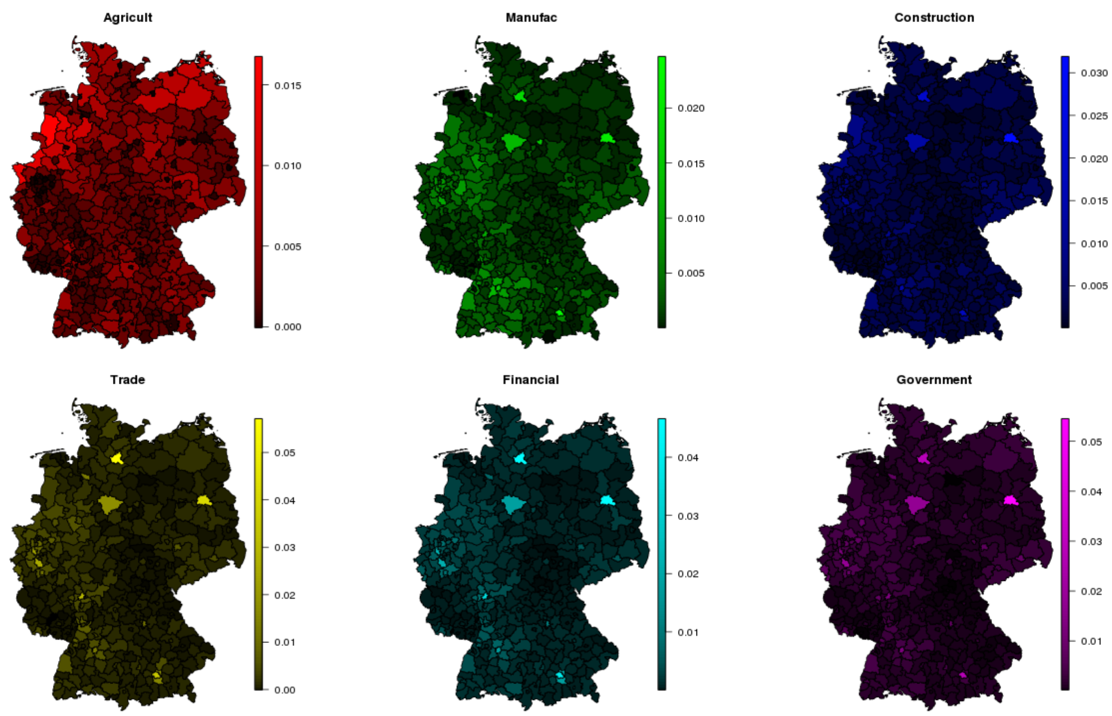
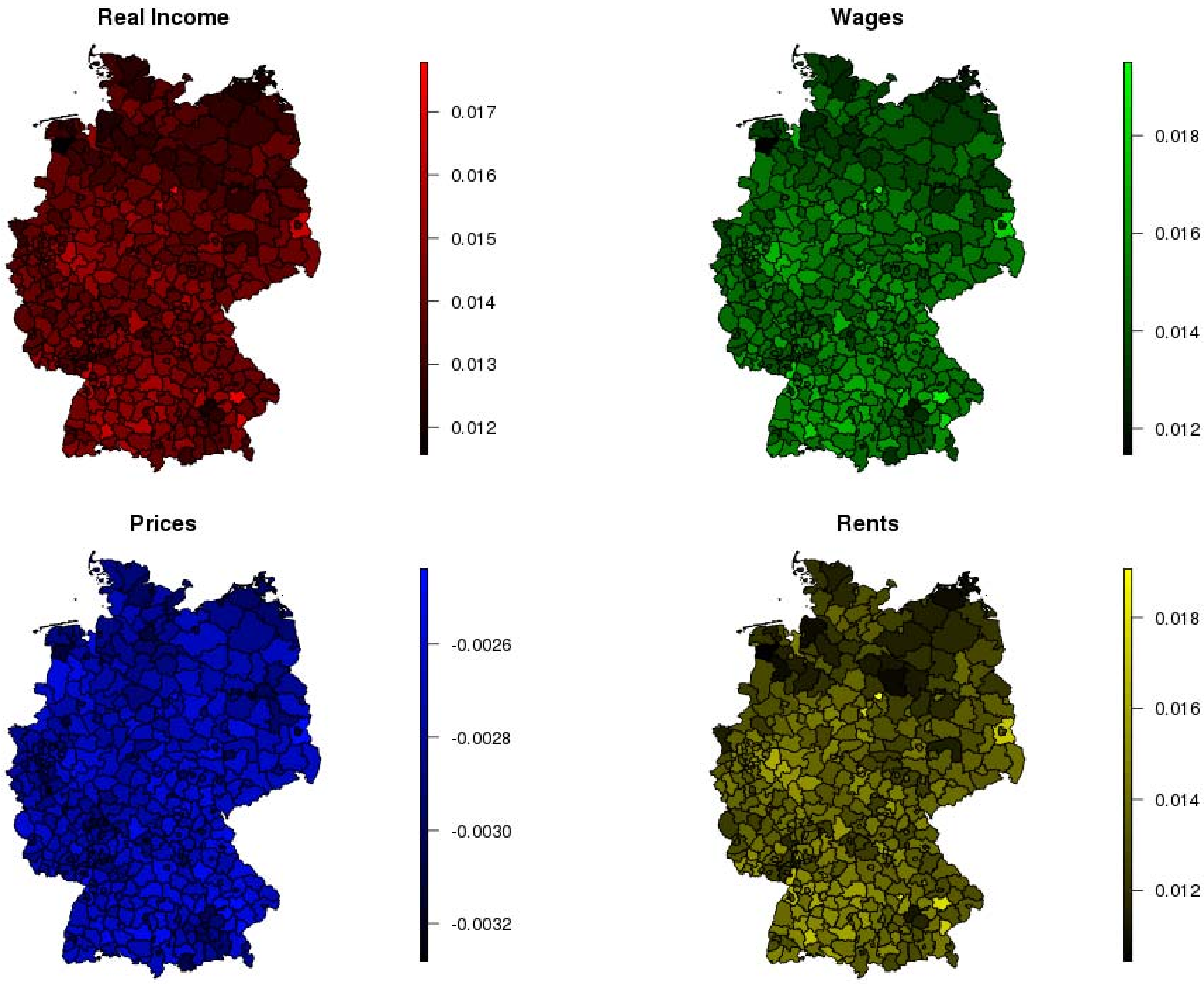


Figure A3: Regional disaggregation, immobile population



App A1: Derivation of trade shares from the WIOD database

For each combination of countries and sectors the WIOD contains an entry $X_{ni,jk}$ of flows from industry k in country i to industry j in country n, including within country flows $X_{ii,jk}$. Moreover, it also provides values for flows from industry k in country i to country n that end up as final consumption by households $X_{ni,Ck}$, final consumption by non-profit organizations $X_{ni,Pk}$, government spending $X_{ni,Gk}$, investments $X_{ni,Ik}$ and inventory changes $X_{ni,Qk}$.

Of course, inventory changes can be negative and sometimes they are significantly large. If we were to calculate final demand by simply summing over consumption, investment, government spending and inventory changes we would end up with a negative final demand in some instances. Hence, to reconcile the real world data with our static model that has no room for inventories we follow Costinot and Rodriguez-Claré (2014) and split the vector of inventory changes into a vector with all positive changes $X_{ni,Qk+}$ and one with all negative changes $X_{ni,Qk-}$ and treat them differently. Positive inventory changes are directly included in the final demand in the same way that final consumption, government spending and investments are, i.e. we treat the build up of inventory as if it were consumed in the current period. Formally final demand in country n for goods from industry k in country i, $X_{ni,Fk}$, is defined as the sum $X_{ni,Fk} = X_{ni,Ck} + X_{ni,Pk} + X_{ni,Gk} + X_{ni,Ik} + X_{ni,Qk+}$.

On the other hand, negative inventory changes are treated as if they were produced (and consumed) in the current period. To do this, we can not simply increase our output vector by the respective (absolute) value of inventory changes because the production of the inventory in the last period also required intermediates and, thus, had a larger overall effect. To see how to calculate the necessary changes consider an example with N countries and J sectors in matrix notation, where X is the original total output vector (of size $N * J \times 1$), A the matrix of input coefficients (of size $N * J \times N * J$), F the final demand vector (of size $N * J \times 1$) including positive inventory changes and Inv the vector of negative inventory changes (of size $N * J \times 1$). Then the total output can be calculated as the sum of intermediate flows, final demand, and inventory changes as $X = AX + F + Inv$. We want to calculate the new level X_{new} for which the final demand vector is unchanged but inventory changes Inv are set to 0, i.e. the total output if the negative inventory changes had been produced in the current period. Rearranging terms we get $X_{new} = (E - A)^{-1}\text{F}$ where E is the unit matrix. We then obtain the new input ouput matrix by combining intermediate good flows AX_{new} and the unchanged final demand vector F.

This final input-output table allows us derive to important parameters of the model. Firstly we can calculate the share that industry k has in the consumption demand of country n by dividing demand for industry k goods by total demand to get $\delta_{nC}^{k} = \sum_i X_{ni,Fk} / \sum_k \sum_i X_{ni,Fk}$. Similarly, we can derive the share that industry k has in the intermediate demand of industry j in country n as $\delta_{nj}^{k} = \sum_i X_{ni,jk} / \sum_k \sum_i X_{ni,jk}$.

Moreover, we can now use the adjusted input output matrix to calculate bilateral trade flows in each industry X_{nik} by summing over all usages (intermediate use in all industries and final demand) of k in its destination country. Hence, $X_{nik} = \sum_j X_{ni,jk} + X_{ni,Fk}$ gives the total flows of industry k goods from i to n. Our bilateral trade flows can be thought of as a set of k matrices, one for each industry, as shown in the figure below.

X_{nik}	Importer 1	Importer 2	$\cdots$	$\sum$
Exporter 1	X_{11k}	X_{12k}	$\cdots$	X_{1k}
Exporter 2	X_{21k}	X_{22k}	$\cdots$	X_{2k}
$\cdots$	$\cdots$	$\cdots$	$\cdots$	$\cdots$
$\sum$	E_{1k}	E_{2k}	$\cdots$	

Figure App-A1-1: Industry specific bilateral trade matrix

When looking at the data, several of these bilateral trade flows will be equal to 0 due to the high level of sectoral and geographical disaggregation. However, while trade between any two countries in any industry can become arbitrarily small in the Eaton-Kortum model, it can only become 0 if trade costs between those two countries were infinitely high. However, in this case it could no longer hold true that direct trade between those countries would be cheaper than trade via some partner country (with non-infinite trade costs). To avoid these problems, we set all zero trade flows equal to a value of 1 US Dollar. Note that after our industry aggregation process each country produces output in each industry. Since this output will be in the millions, setting some values to 1 Dollar has no real influence on the other countries' trade *shares*, which will be used in our final calculations.

Given this data, we can sum over all exporters to get country n's total spending in industry k, i.e. $E_{nk} = \sum_i X_{nik}$. Summing over the spending in each individual industry gives country n's total spending as $E_n = \sum_k E_{nk}$.

Also, summing over all Importers, we can calculate country i's total production in industry k, i.e. firm revenue in industry k, as $X_{ik} = \sum_n X_{nik}$. Total production or revenue in country i is, hence, given by $R_i = \sum_k X_{ik}$.

Finally, we can also derive the share that country i has in country n's spending in industry k, π_{nik}, by dividing industry k flows from i to n, X_{nik}, by country n's total industry spending E_{nk}. Again, these shares can be represented by k bilateral trade share matrices as shown in the figure below.

π_{nik}	Importer 1	Importer 2	$\cdots$
Exporter 1	$\pi_{11k} = \frac{X_{11k}}{E_{1k}}$	$\pi_{21k} = \frac{X_{12k}}{E_{2k}}$	$\cdots$
Exporter 2	$\pi_{12k} = \frac{X_{21k}}{E_{1k}}$	$\pi_{22k} = \frac{X_{22k}}{E_{2k}}$	$\cdots$
$\cdots$	$\cdots$	$\cdots$	$\cdots$
$\sum$	**1**	**1**	**1**

Figure App-A1-2: Industry specific bilateral trade share matrix

App A2: Derivation of Regional Trade Data; Table of Regional Sectors

In order to include the German regions into the calculations we start with value added data from national accounts which are available on the regional level from the German federal and state statistical offices ("Regionaldatenbank der statistischen Ämter des Bundes und der Länder"). This data is available for all 402 regions ("Kreise") disaggregated into 6 groups of NACE/ISIC industries which match directly with WIOD industries as can be seen in table 4.

Assuming that Germany's industry specific shares of value added in production $(\beta_{ik} + \eta_{ik})$ hold for all regions, we can use the value added data to calculate a regions share in total German production for each industry.

We incorporate regions into the initial input-output table in three steps. Firstly, we replace all German rows in the table spreading the intermediate and final demand for German goods across regions according to their production shares. This means that a region with a high output in a certain industry will satisfy a larger share of demand from any trading partner than a region with low output in that particular industry.

Secondly, we replace all German intermediate demand columns by assuming that the German intermediate demand structure in each industry holds for all regions. Under this assumption we can use production shares to determine the intermediate demand levels of each region-industry from each trading partner. Hence, a region with a high output in, say, agriculture will have a higher demand for the typical intermediate goods of this sector than a region with low output in agriculture. Moreover, this region will also feature a higher trade level with whoever is the principal supplier of such intermediates.

Finally, we need to replace the German final demand column by splitting demand across regions. To do so, notice that the value of goods consumption is equal to α times a region's total expenditure given by eq. (14). Thus, a region's share of total German demand is $\frac{\alpha v_n L_n}{\sum_{i \in N^j} \alpha v_i L_i} = \frac{\sum_{k=1}^{K} (\beta_{nk} + \eta_{nk}) R_{nk} + D_n}{\sum_{i \in N^j} \sum_{k=1}^{K} (\beta_{ik} + \eta_{ik}) R_{ik} + D_i}$, where the denominator sums across all German regions. Both the nominator and denominator of the RHS consist simply of the sum of value added and trade deficits. We assume that the latter are spread across regions according to total income[12] and consequentially, the above expenditure shares can be calculated using only our value added data as $\frac{\alpha v_n L_n}{\sum_{i \in N^j} \alpha v_i L_i} = \frac{\sum_{k=1}^{K} (\beta_{nk} + \eta_{nk}) R_{nk}}{\sum_{i \in N^j} \sum_{k=1}^{K} (\beta_{ik} + \eta_{ik}) R_{ik}}$.

12 Though not in the model, the implicit underlying assumption to justify this decision is that of a constant saving rate across German regions.

Table App-A2-1: Regional sectors

WIOD Sector	Description	Regional Sector	NACE ISIC	Regional Label
1	Agriculture, Hunting, Forestry and Fishing	1	A	Agricultural
2	Mining and Quarrying	2	B-E	Manufacturing
3	Food, Beverages and Tobacco			
4	Textiles an Textile Products			
5	Leather, Leather and Footwear			
6	Wood and Products of Wood and Cork			
7	Pulp, Paper, Paper , Printing and Publishing			
8	Coke, Refined Petroleum and Nuclear Fuel			
9	Chemicals and Chemical Products			
10	Rubber and Plastics			
11	Other Non-Metallic Mineral			
12	Basic Metals and Fabricated Metal			
13	Machinery, Nec			
14	Electrical and Optical Equipment			
15	Transport Equipment			
16	Manufacturing, Nec; Recycling			
17	Electricity, Gas and Water Supply			
18	Construction	3	F	Construction
19	Sale, Maintenance and Repair of Motor Vehicles and Motorcycles; Retail Sale of Fuel	4	G-J	Trade
20	Wholesale Trade and Commission Trade, Except of Motor Vehicles and Motorcycles			
21	Retail Trade, Except of Motor Vehicles and Motorcycles; Repair of Household Goods			
22	Hotels and Restaurants			
23	Inland Transport			
24	Water Transport			
25	Air Transport			
26	Other Supporting and Auxiliary Transport Activities; Activities of Travel Agencies			
27	Post and Telecommunications			
28	Financial Intermediation	5	K-N	Financial
29	Real Estate Activities			
30	Renting of M&Eq and Other Business Activities			
31	Public Admin and Defence; Compulsory Social Security	6	O-T	Government
32	Education			
33	Health and Social Work			
34	Other Community, Social and Personal Services			
35	Private Households with Employed Persons			

Supplementary Web Appendix - Not for publication

for: How Deep is Your Love? A Quantitative Spatial Analysis of the Transatlantic Trade Partnership

By Oliver Krebs and Michael Pflüger

S1: List of symbols

S2: Sector matching for the Aichele et al. (2014) scenario

S3: Detailed regional effects of a 25% trade barrier reduction

S1: List of symbols

α	share of housing in consumption
β_{nk}	cost share of labor
C_n	goods and services consumption index in n
C_{nk}	consumption index of industry k goods in n
c_{nk}	cost of an input bundle in industry k in country n
D_n	trade deficit of country n
d_{nik}	iceberg trade costs for shipping an industry k good from country i to n
δ_{nC}^k	share of industry k in consumption of individuals from n
δ_{nj}^k	share of industry k in intermediate demand of firms from industry j and country n
η_{nk}	cost share of land
$F_{nk}(z_{nk})$	country and industry specific Frechet distribution function for productivity draws
γ_k	calculatory constant
H_n	housing stock in n
H_n^C	private housing consumption
i	index for locations/countries
j	index for industries/sectors
k	index for industries/sectors
K	number of sectors
L_n	number of workers in n
$\bar{L}^m$	worker endowment of m
λ_n^m	share of workers of country group m living in location n
m	index for country group
N	number of locations/countries
N^m	country group = set of locations/countries
n	index for locations/countries
ω	index for varieties
P_n	price index for consumption in country n
P_{nk}	price index for industry k goods in country n
$p_{nik}(\omega)$	price for variety ω of industry k offered to consumers in n by a country i firm
π_{nik}	share of country i in the expenditure of country n on industry k goods
$q_{nk}(\omega)$	consumption of variety ω from industry k by an individual from n
R_{nk}	revenue of industry k in country n
r_n	rental rates of land in n
ρ_{nk}	price index for intermediate demand of an industry k firm in country n
σ_k	elasticity of substitution between varieties in industry k
T_{nk}	measure of the average productivity in industry k in country n
θ_k	measure of the density of productivities
U_n	utility of a consumer in n
V_n	indirect utility = real income of a worker in n
v_n	total income of one worker in n
W_n	total labor income of country n
w_n	wages in n
Y_n	total income of country n
$z_{nk}(\omega)$	productivity draw of a firm in country n and industry k producing variety ω

S2: Sector matching for the Aichele et al (2014) scenario

Aichele et al.	Our Sector	Barrier Reduction
Agri-Food	Agriculture	0,52519185
Mining	Mining	0
Food, processed	Food	0,36903795
Textiles Leather	Textiles	0,34027994
Wood	Wood	0
Paper	Publishing	0,16030053
Petroleum		0
Chemicals	Chemicals	0,10543559
	Plastics	0,10543559
Mineral products	Minerals	0,07763666
Ferrous Metals Metals nec Metal products	Metal	0,13628883
Machinery nec	Machinery	0,11501273
Electronics	Electrical Eq	0,22672181
Motor vehicles	Transp. Eq	0,50214149
Manufactures nec	Manufac.	0,11146342
Electricity Gas Water	Utilities	0,05672007
Construction	Construction	0,05355535
Trade services	Wholesale	0,0786294
	Retail	0,0786294
Recreational services	Hotels	0,03656916
Water Transport Air transport	Transport	0,03970704
Transport nec	Other Transp.	0,05339651
Communication	Telecom.	0,0179606
Financial services nec Insurance	Financial	0,04298933
Other services	Real Estate	0,05767584
Business services	Other Bus.	0,0630371
Other services	Public Admin	0,05767584
	Education	0,05767584
	Health	0,05767584
	Community	0,05767584

Legend: We use table 1 from Aichele et al (2014) together with their estimates for θ to calculate the coefficients $\delta_{shallow}$ and δ_{deep}. Ignoring tariff changes, the reduction in trade barriers resulting from a deep trade agreement can then be calculated as $e^{\delta_{shallow}+\delta_{deep}} - 1$. Following the footnote 15 in Aichele et al (2014). we ignore the mining and petroleum sector effects, which deliver insignificant results across different specifications, as well as negative total coefficients.

S3: Detailed regional effects of a 25% Barrier Reduction

	real income		prices		wages		rents		population
	immobile	mobile	immobile	mobile	immobile	mobile	immobile	mobile	mobile
Ahrweiler, Landkreis	1,37%	1,41%	-0,28%	-0,28%	1,42%	1,46%	1,34%	1,30%	-0,08%
Aichach-Friedberg, Landkreis	1,39%	1,41%	-0,27%	-0,26%	1,48%	1,50%	1,33%	1,32%	-0,03%
Alb-Donau-Kreis	1,49%	1,41%	-0,26%	-0,26%	1,61%	1,54%	1,45%	1,56%	0,16%
Altenburger Land, Kreis	1,38%	1,41%	-0,26%	-0,26%	1,47%	1,50%	1,33%	1,31%	-0,04%
Altenkirchen (Westerwald), Landkreis	1,47%	1,41%	-0,26%	-0,26%	1,57%	1,52%	1,46%	1,54%	0,12%
Altmarkkreis Salzwedel	1,29%	1,41%	-0,27%	-0,26%	1,39%	1,49%	1,08%	0,95%	-0,22%
Altoetting, Landkreis	1,67%	1,41%	-0,25%	-0,24%	1,83%	1,62%	1,74%	2,05%	0,49%
Alzey-Worms, Landkreis	1,32%	1,41%	-0,27%	-0,27%	1,40%	1,48%	1,19%	1,09%	-0,17%
Amberg	1,51%	1,41%	-0,26%	-0,26%	1,61%	1,53%	1,54%	1,66%	0,19%
Amberg-Sulzbach, Landkreis	1,42%	1,41%	-0,26%	-0,26%	1,52%	1,52%	1,34%	1,36%	0,02%
Ammerland, Landkreis	1,29%	1,41%	-0,27%	-0,27%	1,36%	1,46%	1,16%	1,03%	-0,22%
Anhalt-Bitterfeld, Landkreis	1,36%	1,41%	-0,27%	-0,27%	1,45%	1,48%	1,28%	1,24%	-0,08%
Ansbach	1,44%	1,41%	-0,28%	-0,28%	1,51%	1,49%	1,44%	1,49%	0,07%
Ansbach, Landkreis	1,45%	1,41%	-0,25%	-0,25%	1,57%	1,54%	1,38%	1,44%	0,08%
Aschaffenburg	1,32%	1,41%	-0,29%	-0,29%	1,37%	1,44%	1,28%	1,19%	-0,15%
Aschaffenburg, Landkreis	1,32%	1,41%	-0,28%	-0,28%	1,38%	1,45%	1,24%	1,15%	-0,16%
Augsburg	1,43%	1,41%	-0,28%	-0,28%	1,50%	1,48%	1,43%	1,46%	0,04%
Augsburg, Landkreis	1,45%	1,41%	-0,27%	-0,26%	1,54%	1,51%	1,43%	1,49%	0,08%
Aurich, Landkreis	1,29%	1,41%	-0,28%	-0,28%	1,34%	1,43%	1,22%	1,09%	-0,22%
AUS	0,23%	0,23%	-1,00%	-1,00%	-0,68%	-0,68%	-0,73%	-0,73%	0,00%
AUT	1,01%	1,01%	-0,56%	-0,56%	0,79%	0,79%	0,59%	0,59%	0,00%
Bad Duerkheim, Landkreis	1,35%	1,41%	-0,27%	-0,27%	1,43%	1,48%	1,24%	1,18%	-0,11%
Baden-Baden, Kreisfreie Stadt	1,34%	1,41%	-0,29%	-0,29%	1,38%	1,44%	1,33%	1,26%	-0,12%
Bad Kissingen, Landkreis	1,33%	1,41%	-0,27%	-0,27%	1,40%	1,46%	1,29%	1,21%	-0,13%
Bad Kreuznach, Landkreis	1,40%	1,41%	-0,27%	-0,27%	1,48%	1,49%	1,36%	1,36%	0,00%
Bad Toelz-Wolfratshausen, Landkreis	1,37%	1,41%	-0,27%	-0,27%	1,45%	1,48%	1,33%	1,29%	-0,06%
Bamberg	1,46%	1,41%	-0,27%	-0,27%	1,55%	1,51%	1,47%	1,55%	0,11%
Bamberg, Landkreis	1,41%	1,41%	-0,26%	-0,26%	1,50%	1,50%	1,36%	1,36%	0,00%
Barnim, Landkreis	1,33%	1,41%	-0,29%	-0,28%	1,38%	1,44%	1,31%	1,23%	-0,14%
Bautzen, Landkreis	1,41%	1,41%	-0,27%	-0,26%	1,50%	1,50%	1,37%	1,38%	0,00%
Bayreuth	1,41%	1,41%	-0,28%	-0,28%	1,47%	1,47%	1,42%	1,43%	0,01%
Bayreuth, Landkreis	1,36%	1,41%	-0,27%	-0,27%	1,44%	1,48%	1,27%	1,22%	-0,09%
BEL	2,13%	2,13%	-0,70%	-0,70%	2,06%	2,06%	1,93%	1,93%	0,00%
Berchtesgadener Land, Landkreis	1,33%	1,41%	-0,28%	-0,28%	1,39%	1,45%	1,28%	1,21%	-0,14%
Bergstrasse, Landkreis	1,45%	1,41%	-0,27%	-0,27%	1,54%	1,51%	1,44%	1,50%	0,08%
Berlin	1,36%	1,41%	-0,30%	-0,29%	1,39%	1,43%	1,38%	1,33%	-0,08%
Bernkastel-Wittlich, Landkreis	1,44%	1,41%	-0,26%	-0,26%	1,55%	1,52%	1,39%	1,43%	0,07%
BGR	0,45%	0,45%	-0,80%	-0,80%	-0,23%	-0,23%	-0,16%	-0,16%	0,00%
Biberach, Landkreis	1,58%	1,41%	-0,25%	-0,25%	1,72%	1,58%	1,59%	1,79%	0,32%

Bielefeld, Kreisfreie Stadt	1,38%	1,41%	-0,29%	-0,28%	1,43%	1,46%	1,38%	1,36%	-0,04%
Birkenfeld, Landkreis	1,42%	1,41%	-0,27%	-0,27%	1,50%	1,50%	1,42%	1,45%	0,04%
Bochum, Kreisfreie Stadt	1,40%	1,41%	-0,29%	-0,29%	1,44%	1,45%	1,42%	1,42%	-0,02%
Bodenseekreis	1,57%	1,41%	-0,26%	-0,25%	1,70%	1,57%	1,58%	1,77%	0,30%
Boeblingen, Landkreis	1,58%	1,41%	-0,26%	-0,26%	1,71%	1,57%	1,61%	1,82%	0,33%
Boerde, Landkreis	1,39%	1,41%	-0,26%	-0,26%	1,51%	1,52%	1,26%	1,25%	-0,02%
Bonn, Kreisfreie Stadt	1,27%	1,41%	-0,33%	-0,32%	1,25%	1,36%	1,27%	1,12%	-0,25%
Borken, Kreis	1,40%	1,41%	-0,26%	-0,26%	1,51%	1,51%	1,33%	1,33%	0,00%
Bottrop, Kreisfreie Stadt	1,38%	1,41%	-0,28%	-0,28%	1,43%	1,46%	1,39%	1,36%	-0,05%
BRA	-0,02%	-0,02%	-0,94%	-0,94%	-0,97%	-0,97%	-0,96%	-0,96%	0,00%
Brandenburg an der Havel, Kreisfreie Stadt	1,42%	1,41%	-0,28%	-0,28%	1,49%	1,48%	1,43%	1,46%	0,03%
Braunschweig, Kreisfreie Stadt	1,43%	1,41%	-0,28%	-0,28%	1,49%	1,48%	1,44%	1,47%	0,04%
Breisgau-Hochschwarzwald, Landkreis	1,37%	1,41%	-0,27%	-0,27%	1,45%	1,48%	1,31%	1,27%	-0,07%
Bremen, Kreisfreie Stadt	1,35%	1,41%	-0,29%	-0,28%	1,40%	1,45%	1,32%	1,27%	-0,10%
Bremerhaven, Kreisfreie Stadt	1,35%	1,41%	-0,30%	-0,30%	1,37%	1,42%	1,35%	1,29%	-0,11%
Burgenlandkreis	1,42%	1,41%	-0,26%	-0,26%	1,52%	1,51%	1,36%	1,39%	0,03%
Calw, Landkreis	1,42%	1,41%	-0,27%	-0,27%	1,51%	1,50%	1,41%	1,44%	0,04%
CAN	-0,16%	-0,16%	-1,20%	-1,20%	-1,43%	-1,43%	-1,34%	-1,34%	0,00%
Celle, Landkreis	1,42%	1,41%	-0,27%	-0,27%	1,50%	1,50%	1,39%	1,41%	0,03%
Cham, Landkreis	1,42%	1,41%	-0,26%	-0,25%	1,53%	1,52%	1,36%	1,39%	0,03%
Chemnitz, Stadt	1,39%	1,41%	-0,28%	-0,28%	1,45%	1,46%	1,40%	1,39%	-0,03%
CHN	-0,09%	-0,09%	-1,11%	-1,11%	-1,18%	-1,18%	-1,19%	-1,19%	0,00%
Cloppenburg, Landkreis	1,31%	1,41%	-0,25%	-0,25%	1,42%	1,51%	1,09%	0,98%	-0,19%
Coburg	1,51%	1,41%	-0,27%	-0,27%	1,61%	1,53%	1,56%	1,70%	0,21%
Coburg, Landkreis	1,49%	1,41%	-0,26%	-0,26%	1,60%	1,54%	1,44%	1,54%	0,15%
Cochem-Zell, Landkreis	1,31%	1,41%	-0,28%	-0,28%	1,36%	1,44%	1,26%	1,15%	-0,18%
Coesfeld, Kreis	1,33%	1,41%	-0,28%	-0,27%	1,41%	1,47%	1,23%	1,15%	-0,14%
Cottbus, Kreisfreie Stadt	1,34%	1,41%	-0,31%	-0,30%	1,35%	1,41%	1,36%	1,29%	-0,12%
Cuxhaven, Landkreis	1,24%	1,41%	-0,28%	-0,28%	1,29%	1,43%	1,09%	0,90%	-0,32%
CYP	0,62%	0,62%	-2,24%	-2,24%	-1,75%	-1,75%	-1,39%	-1,39%	0,00%
CZE	1,27%	1,27%	-1,33%	-1,33%	0,33%	0,33%	0,26%	0,26%	0,00%
Dachau, Landkreis	1,37%	1,41%	-0,28%	-0,27%	1,44%	1,47%	1,34%	1,31%	-0,06%
Dahme-Spreewald, Landkreis	1,32%	1,41%	-0,29%	-0,29%	1,35%	1,43%	1,31%	1,21%	-0,16%
Darmstadt-Dieburg, Landkreis	1,38%	1,41%	-0,28%	-0,27%	1,44%	1,47%	1,35%	1,33%	-0,05%
Darmstadt, Kreisfreie Stadt	1,40%	1,41%	-0,29%	-0,28%	1,46%	1,47%	1,40%	1,40%	0,00%
Deggendorf, Landkreis	1,38%	1,41%	-0,26%	-0,25%	1,47%	1,50%	1,35%	1,33%	-0,05%
Delmenhorst, Kreisfreie Stadt	1,37%	1,41%	-0,29%	-0,29%	1,41%	1,44%	1,38%	1,35%	-0,07%
Dessau-Rosslau, Kreisfreie Stadt	1,41%	1,41%	-0,28%	-0,27%	1,48%	1,48%	1,43%	1,44%	0,02%
Diepholz, Landkreis	1,30%	1,41%	-0,27%	-0,27%	1,39%	1,47%	1,14%	1,03%	-0,19%
Dillingen a,d,Donau, Landkreis	1,44%	1,41%	-0,26%	-0,25%	1,55%	1,52%	1,42%	1,47%	0,08%

Dingolfing-Landau, Landkreis	1,73%	1,41%	-0,24%	-0,24%	1,90%	1,64%	1,78%	2,15%	0,59%
Dithmarschen, Landkreis	1,37%	1,41%	-0,27%	-0,26%	1,46%	1,49%	1,27%	1,23%	-0,07%
DNK	1,72%	1,72%	-1,52%	-1,52%	0,76%	0,76%	0,42%	0,42%	0,00%
Donau-Ries, Landkreis	1,51%	1,41%	-0,26%	-0,25%	1,64%	1,56%	1,49%	1,62%	0,21%
Donnersbergkreis	1,52%	1,41%	-0,26%	-0,25%	1,65%	1,56%	1,50%	1,64%	0,22%
Dortmund, Kreisfreie Stadt	1,37%	1,41%	-0,29%	-0,29%	1,41%	1,44%	1,38%	1,35%	-0,07%
Dresden, Stadt	1,38%	1,41%	-0,28%	-0,28%	1,43%	1,46%	1,40%	1,38%	-0,04%
Dueren, Kreis	1,45%	1,41%	-0,27%	-0,27%	1,53%	1,51%	1,45%	1,51%	0,08%
Duesseldorf, Kreisfreie Stadt	1,33%	1,41%	-0,30%	-0,30%	1,35%	1,41%	1,34%	1,26%	-0,14%
Duisburg, Kreisfreie Stadt	1,46%	1,41%	-0,27%	-0,27%	1,54%	1,50%	1,45%	1,52%	0,10%
Ebersberg, Landkreis	1,33%	1,41%	-0,28%	-0,28%	1,37%	1,44%	1,29%	1,20%	-0,15%
Eichsfeld, Kreis	1,42%	1,41%	-0,26%	-0,25%	1,53%	1,52%	1,38%	1,40%	0,03%
Eichstaett, Landkreis	1,40%	1,41%	-0,27%	-0,27%	1,49%	1,50%	1,37%	1,38%	0,00%
Eifelkreis Bitburg-Pruem	1,38%	1,41%	-0,26%	-0,26%	1,49%	1,51%	1,24%	1,21%	-0,06%
Eisenach, krsfr, Stadt	1,48%	1,41%	-0,26%	-0,26%	1,58%	1,52%	1,50%	1,60%	0,15%
Elbe-Elster, Landkreis	1,36%	1,41%	-0,27%	-0,27%	1,44%	1,48%	1,30%	1,25%	-0,08%
Emden, Kreisfreie Stadt	1,55%	1,41%	-0,26%	-0,26%	1,67%	1,56%	1,56%	1,73%	0,27%
Emmendingen, Landkreis	1,47%	1,41%	-0,26%	-0,26%	1,57%	1,53%	1,46%	1,55%	0,12%
Emsland, Landkreis	1,40%	1,41%	-0,26%	-0,25%	1,51%	1,52%	1,29%	1,28%	-0,02%
Ennepe-Ruhr-Kreis	1,50%	1,41%	-0,27%	-0,26%	1,61%	1,53%	1,52%	1,65%	0,19%
Enzkreis	1,55%	1,41%	-0,26%	-0,26%	1,67%	1,56%	1,57%	1,74%	0,26%
Erding, Landkreis	1,26%	1,41%	-0,29%	-0,29%	1,30%	1,42%	1,17%	1,01%	-0,27%
Erfurt, krsfr, Stadt	1,35%	1,41%	-0,29%	-0,29%	1,38%	1,43%	1,35%	1,29%	-0,11%
Erlangen	1,59%	1,41%	-0,26%	-0,26%	1,71%	1,57%	1,64%	1,86%	0,34%
Erlangen-Hoechstadt, Landkreis	1,54%	1,41%	-0,26%	-0,26%	1,66%	1,55%	1,56%	1,73%	0,26%
Erzgebirgskreis	1,43%	1,41%	-0,26%	-0,26%	1,52%	1,51%	1,41%	1,44%	0,04%
ESP	1,05%	1,05%	-0,71%	-0,71%	0,74%	0,74%	0,56%	0,56%	0,00%
Essen, Kreisfreie Stadt	1,41%	1,41%	-0,28%	-0,28%	1,48%	1,48%	1,42%	1,44%	0,02%
Esslingen, Landkreis	1,48%	1,41%	-0,27%	-0,26%	1,58%	1,52%	1,48%	1,58%	0,14%
EST	0,73%	0,73%	-0,82%	-0,82%	0,18%	0,18%	-0,03%	-0,03%	0,00%
Euskirchen, Kreis	1,41%	1,41%	-0,27%	-0,27%	1,49%	1,49%	1,38%	1,39%	0,00%
FIN	1,13%	1,13%	-0,51%	-0,51%	1,01%	1,01%	0,83%	0,83%	0,00%
Flensburg, Kreisfreie Stadt	1,34%	1,41%	-0,30%	-0,30%	1,36%	1,43%	1,32%	1,25%	-0,13%
Forchheim, Landkreis	1,44%	1,41%	-0,27%	-0,26%	1,53%	1,51%	1,41%	1,46%	0,06%
FRA	0,88%	0,88%	-0,47%	-0,47%	0,73%	0,73%	0,63%	0,63%	0,00%
Frankenthal (Pfalz), Kreisfreie Stadt	1,53%	1,41%	-0,26%	-0,26%	1,64%	1,55%	1,51%	1,66%	0,23%
Frankfurt am Main, Kreisfreie Stadt	1,35%	1,41%	-0,30%	-0,30%	1,37%	1,42%	1,36%	1,30%	-0,11%
Frankfurt (Oder), Kreisfreie Stadt	1,41%	1,41%	-0,28%	-0,28%	1,47%	1,47%	1,43%	1,45%	0,02%
Freiburg im Breisgau, Kreisfreie Stadt	1,36%	1,41%	-0,30%	-0,29%	1,39%	1,44%	1,35%	1,30%	-0,09%
Freising, Landkreis	1,21%	1,41%	-0,30%	-0,30%	1,23%	1,39%	1,12%	0,90%	-0,36%
Freudenstadt, Landkreis	1,50%	1,41%	-0,26%	-0,26%	1,61%	1,54%	1,50%	1,62%	0,18%
Freyung-Grafenau, Landkreis	1,36%	1,41%	-0,27%	-0,26%	1,44%	1,48%	1,30%	1,25%	-0,09%

Friesland, Landkreis	1,35%	1,41%	-0,28%	-0,28%	1,41%	1,46%	1,28%	1,23%	-0,10%
Fuerstenfeldbruck, Landkreis	1,34%	1,41%	-0,28%	-0,28%	1,38%	1,44%	1,33%	1,25%	-0,13%
Fuerth	1,38%	1,41%	-0,29%	-0,28%	1,43%	1,46%	1,36%	1,34%	-0,05%
Fuerth, Landkreis	1,42%	1,41%	-0,27%	-0,27%	1,49%	1,49%	1,42%	1,45%	0,03%
Fulda, Landkreis	1,39%	1,41%	-0,27%	-0,27%	1,46%	1,48%	1,37%	1,35%	-0,03%
Garmisch-Partenkirchen, Landkreis	1,29%	1,41%	-0,31%	-0,30%	1,30%	1,40%	1,27%	1,14%	-0,22%
GBR	1,77%	1,77%	-1,03%	-1,03%	1,36%	1,36%	1,15%	1,15%	0,00%
Gelsenkirchen, Kreisfreie Stadt	1,48%	1,41%	-0,27%	-0,26%	1,57%	1,52%	1,50%	1,59%	0,14%
Gera, krsfr, Stadt	1,37%	1,41%	-0,29%	-0,29%	1,41%	1,44%	1,38%	1,34%	-0,06%
Germersheim, Landkreis	1,64%	1,41%	-0,25%	-0,25%	1,79%	1,61%	1,66%	1,94%	0,43%
Giessen, Landkreis	1,38%	1,41%	-0,29%	-0,28%	1,43%	1,46%	1,38%	1,35%	-0,05%
Gifhorn, Landkreis	1,33%	1,41%	-0,27%	-0,27%	1,41%	1,47%	1,23%	1,15%	-0,14%
Goeppingen, Landkreis	1,47%	1,41%	-0,26%	-0,26%	1,57%	1,52%	1,48%	1,57%	0,12%
Goerlitz, Landkreis	1,45%	1,41%	-0,26%	-0,26%	1,55%	1,52%	1,42%	1,48%	0,08%
Goettingen, Landkreis	1,39%	1,41%	-0,28%	-0,28%	1,45%	1,47%	1,38%	1,37%	-0,02%
Goslar, Landkreis	1,41%	1,41%	-0,28%	-0,27%	1,48%	1,48%	1,39%	1,40%	0,01%
Gotha, Kreis	1,44%	1,41%	-0,26%	-0,26%	1,55%	1,52%	1,40%	1,46%	0,07%
Grafschaft Bentheim, Landkreis	1,37%	1,41%	-0,26%	-0,26%	1,46%	1,50%	1,25%	1,21%	-0,08%
GRC	0,65%	0,65%	-2,37%	-2,37%	-1,76%	-1,76%	-1,62%	-1,62%	0,00%
Greiz, Kreis	1,33%	1,41%	-0,26%	-0,26%	1,42%	1,48%	1,24%	1,16%	-0,13%
Gross-Gerau, Landkreis	1,40%	1,41%	-0,28%	-0,27%	1,47%	1,48%	1,36%	1,35%	-0,01%
Guenzburg, Landkreis	1,54%	1,41%	-0,26%	-0,25%	1,66%	1,56%	1,55%	1,71%	0,25%
Guetersloh, Kreis	1,46%	1,41%	-0,27%	-0,26%	1,56%	1,52%	1,43%	1,50%	0,11%
Hagen, Kreisfreie Stadt	1,43%	1,41%	-0,28%	-0,27%	1,51%	1,49%	1,43%	1,47%	0,05%
Halle (Saale), Kreisfreie Stadt	1,36%	1,41%	-0,29%	-0,29%	1,38%	1,43%	1,38%	1,33%	-0,09%
Hamburg	1,30%	1,41%	-0,31%	-0,30%	1,31%	1,40%	1,28%	1,16%	-0,20%
Hameln-Pyrmont, Landkreis	1,48%	1,41%	-0,27%	-0,26%	1,58%	1,53%	1,48%	1,58%	0,14%
Hamm, Kreisfreie Stadt	1,43%	1,41%	-0,28%	-0,27%	1,50%	1,49%	1,43%	1,46%	0,04%
Harburg, Landkreis	1,27%	1,41%	-0,29%	-0,29%	1,30%	1,41%	1,21%	1,06%	-0,26%
Harz, Landkreis	1,38%	1,41%	-0,27%	-0,27%	1,47%	1,49%	1,32%	1,30%	-0,04%
Hassberge, Landkreis	1,48%	1,41%	-0,26%	-0,26%	1,60%	1,54%	1,43%	1,53%	0,14%
Havelland, Landkreis	1,34%	1,41%	-0,27%	-0,27%	1,41%	1,47%	1,27%	1,20%	-0,13%
Heidekreis, Landkreis	1,32%	1,41%	-0,28%	-0,28%	1,37%	1,45%	1,25%	1,15%	-0,17%
Heidelberg, Kreisfreie Stadt	1,33%	1,41%	-0,30%	-0,30%	1,35%	1,42%	1,32%	1,24%	-0,14%
Heidenheim, Landkreis	1,55%	1,41%	-0,26%	-0,26%	1,67%	1,56%	1,56%	1,73%	0,26%
Heilbronn, Kreisfreie Stadt	1,40%	1,41%	-0,28%	-0,28%	1,46%	1,47%	1,39%	1,40%	-0,01%
Heilbronn, Landkreis	1,54%	1,41%	-0,26%	-0,26%	1,66%	1,55%	1,53%	1,68%	0,24%
Heinsberg, Kreis	1,36%	1,41%	-0,28%	-0,27%	1,43%	1,47%	1,34%	1,30%	-0,08%
Helmstedt, Landkreis	1,42%	1,41%	-0,27%	-0,27%	1,51%	1,51%	1,37%	1,39%	0,03%
Herford, Kreis	1,46%	1,41%	-0,27%	-0,27%	1,55%	1,51%	1,45%	1,52%	0,10%
Herne, Kreisfreie Stadt	1,41%	1,41%	-0,28%	-0,27%	1,47%	1,47%	1,44%	1,45%	0,01%
Hersfeld-Rotenburg, Landkreis	1,41%	1,41%	-0,27%	-0,26%	1,49%	1,50%	1,38%	1,39%	0,01%

Herzogtum Lauenburg, Landkreis	1,38%	1,41%	-0,28%	-0,28%	1,44%	1,47%	1,35%	1,32%	-0,05%
Hildburghausen, Kreis	1,37%	1,41%	-0,27%	-0,26%	1,46%	1,50%	1,25%	1,21%	-0,07%
Hildesheim, Landkreis	1,40%	1,41%	-0,28%	-0,27%	1,48%	1,48%	1,38%	1,38%	-0,01%
Hochsauerlandkreis	1,49%	1,41%	-0,26%	-0,26%	1,60%	1,54%	1,47%	1,57%	0,15%
Hochtaunuskreis	1,43%	1,41%	-0,29%	-0,28%	1,48%	1,47%	1,47%	1,51%	0,05%
Hoexter, Kreis	1,36%	1,41%	-0,28%	-0,27%	1,43%	1,48%	1,29%	1,24%	-0,08%
Hof	1,36%	1,41%	-0,30%	-0,30%	1,38%	1,43%	1,36%	1,31%	-0,09%
Hof, Landkreis	1,46%	1,41%	-0,26%	-0,26%	1,57%	1,53%	1,40%	1,46%	0,10%
Hohenlohekreis	1,42%	1,41%	-0,27%	-0,27%	1,52%	1,51%	1,33%	1,35%	0,02%
Holzminden, Landkreis	1,52%	1,41%	-0,26%	-0,25%	1,65%	1,56%	1,49%	1,64%	0,22%
HUN	1,38%	1,39%	-1,88%	-1,88%	-0,01%	-0,01%	-0,31%	-0,31%	0,00%
IDN	-0,05%	-0,05%	-1,05%	-1,05%	-1,08%	-1,08%	-1,09%	-1,09%	0,00%
Ilm-Kreis	1,46%	1,41%	-0,26%	-0,26%	1,56%	1,52%	1,43%	1,50%	0,10%
IND	0,19%	0,19%	-0,96%	-0,96%	-0,73%	-0,73%	-0,69%	-0,69%	0,00%
Ingolstadt	1,73%	1,41%	-0,25%	-0,25%	1,90%	1,63%	1,84%	2,21%	0,60%
IRL	13,37%	13,37%	-0,93%	-0,93%	12,62%	12,62%	14,03%	14,03%	0,00%
ITA	0,69%	0,69%	-0,28%	-0,29%	0,67%	0,67%	0,50%	0,50%	0,00%
Jena, krsfr, Stadt	1,42%	1,41%	-0,28%	-0,27%	1,49%	1,48%	1,42%	1,44%	0,03%
Jerichower Land, Landkreis	1,33%	1,41%	-0,26%	-0,26%	1,42%	1,49%	1,20%	1,11%	-0,15%
JPN	-0,02%	-0,02%	-1,10%	-1,10%	-1,13%	-1,13%	-1,12%	-1,12%	0,00%
Kaiserslautern, Kreisfreie Stadt	1,39%	1,41%	-0,29%	-0,28%	1,45%	1,46%	1,40%	1,39%	-0,02%
Kaiserslautern, Landkreis	1,39%	1,41%	-0,27%	-0,27%	1,45%	1,47%	1,39%	1,37%	-0,04%
Karlsruhe, Kreisfreie Stadt	1,37%	1,41%	-0,29%	-0,29%	1,41%	1,45%	1,35%	1,32%	-0,07%
Karlsruhe, Landkreis	1,49%	1,41%	-0,27%	-0,26%	1,59%	1,53%	1,50%	1,60%	0,16%
Kassel, Kreisfreie Stadt	1,36%	1,41%	-0,29%	-0,29%	1,40%	1,44%	1,35%	1,30%	-0,09%
Kassel, Landkreis	1,49%	1,41%	-0,27%	-0,26%	1,59%	1,53%	1,48%	1,59%	0,16%
Kaufbeuren	1,39%	1,41%	-0,28%	-0,28%	1,44%	1,46%	1,42%	1,41%	-0,03%
Kelheim, Landkreis	1,45%	1,41%	-0,26%	-0,25%	1,56%	1,53%	1,40%	1,46%	0,08%
Kempten (Allgaeu)	1,28%	1,41%	-0,30%	-0,30%	1,30%	1,40%	1,23%	1,09%	-0,23%
Kiel, Landeshauptstadt, Kreisfreie Stadt	1,37%	1,41%	-0,30%	-0,30%	1,40%	1,43%	1,38%	1,35%	-0,07%
Kitzingen, Landkreis	1,39%	1,41%	-0,27%	-0,27%	1,49%	1,50%	1,27%	1,26%	-0,03%
Kleve, Kreis	1,28%	1,41%	-0,28%	-0,28%	1,34%	1,45%	1,15%	1,01%	-0,24%
Koblenz, Kreisfreie Stadt	1,34%	1,41%	-0,30%	-0,30%	1,36%	1,42%	1,33%	1,26%	-0,13%
Koeln, Kreisfreie Stadt	1,33%	1,41%	-0,30%	-0,30%	1,35%	1,42%	1,32%	1,24%	-0,14%
Konstanz, Landkreis	1,43%	1,41%	-0,27%	-0,27%	1,51%	1,50%	1,40%	1,44%	0,05%
KOR	-0,12%	-0,12%	-1,03%	-1,03%	-1,13%	-1,13%	-1,13%	-1,13%	0,00%
Krefeld, Kreisfreie Stadt	1,48%	1,41%	-0,27%	-0,27%	1,57%	1,52%	1,48%	1,58%	0,14%
Kreisfreie Stadt Rostock, Hansestadt	1,31%	1,41%	-0,30%	-0,30%	1,32%	1,41%	1,29%	1,18%	-0,19%
Kreisfreie Stadt Schwerin, Landeshauptstadt	1,35%	1,41%	-0,30%	-0,29%	1,38%	1,42%	1,37%	1,32%	-0,10%
Kronach, Landkreis	1,49%	1,41%	-0,26%	-0,26%	1,61%	1,55%	1,45%	1,56%	0,16%
Kulmbach, Landkreis	1,45%	1,41%	-0,26%	-0,26%	1,55%	1,52%	1,42%	1,48%	0,09%
Kusel, Landkreis	1,42%	1,41%	-0,27%	-0,27%	1,49%	1,49%	1,41%	1,43%	0,02%
Kyffhaeuserkreis	1,36%	1,41%	-0,26%	-0,26%	1,46%	1,50%	1,24%	1,20%	-0,08%

Lahn-Dill-Kreis	1,51%	1,41%	-0,27%	-0,26%	1,61%	1,53%	1,53%	1,66%	0,19%
Landau in der Pfalz, Kreisfreie Stadt	1,35%	1,41%	-0,29%	-0,29%	1,39%	1,44%	1,34%	1,29%	-0,09%
Landkreis Ludwigslust-Parchim	1,31%	1,41%	-0,27%	-0,26%	1,40%	1,48%	1,15%	1,04%	-0,19%
Landkreis Mecklenburgische Seenplatte	1,29%	1,41%	-0,28%	-0,28%	1,34%	1,44%	1,18%	1,04%	-0,23%
Landkreis Nordwestmecklenburg	1,36%	1,41%	-0,27%	-0,26%	1,44%	1,49%	1,26%	1,21%	-0,09%
Landkreis Rostock	1,27%	1,41%	-0,28%	-0,28%	1,32%	1,44%	1,16%	1,00%	-0,26%
Landkreis Vorpommern-Greifswald	1,30%	1,41%	-0,29%	-0,29%	1,34%	1,43%	1,22%	1,10%	-0,21%
Landkreis Vorpommern-Ruegen	1,23%	1,41%	-0,29%	-0,29%	1,26%	1,41%	1,09%	0,88%	-0,34%
Landsberg am Lech, Landkreis	1,41%	1,41%	-0,27%	-0,27%	1,49%	1,49%	1,38%	1,39%	0,01%
Landshut	1,46%	1,41%	-0,28%	-0,28%	1,53%	1,50%	1,48%	1,55%	0,10%
Landshut, Landkreis	1,52%	1,41%	-0,25%	-0,25%	1,65%	1,57%	1,47%	1,60%	0,21%
Leer, Landkreis	1,16%	1,41%	-0,31%	-0,31%	1,15%	1,35%	1,05%	0,77%	-0,47%
Leipzig, Landkreis	1,40%	1,41%	-0,26%	-0,26%	1,50%	1,51%	1,36%	1,36%	0,00%
Leipzig, Stadt	1,33%	1,41%	-0,29%	-0,29%	1,36%	1,43%	1,33%	1,25%	-0,14%
Leverkusen, Kreisfreie Stadt	1,54%	1,41%	-0,26%	-0,26%	1,66%	1,55%	1,56%	1,72%	0,26%
Lichtenfels, Landkreis	1,38%	1,41%	-0,28%	-0,27%	1,45%	1,47%	1,36%	1,34%	-0,04%
Limburg-Weilburg, Landkreis	1,36%	1,41%	-0,28%	-0,28%	1,42%	1,46%	1,36%	1,31%	-0,08%
Lindau (Bodensee), Landkreis	1,49%	1,41%	-0,26%	-0,26%	1,59%	1,53%	1,49%	1,59%	0,15%
Lippe, Kreis	1,45%	1,41%	-0,27%	-0,27%	1,53%	1,50%	1,44%	1,50%	0,08%
Loerrach, Landkreis	1,49%	1,41%	-0,26%	-0,26%	1,59%	1,53%	1,48%	1,59%	0,16%
LTU	0,33%	0,33%	-0,65%	-0,65%	-0,18%	-0,18%	-0,33%	-0,33%	0,00%
Ludwigsburg, Landkreis	1,51%	1,41%	-0,26%	-0,26%	1,61%	1,53%	1,53%	1,65%	0,19%
Ludwigshafen am Rhein, Kreisfreie Stadt	1,74%	1,41%	-0,25%	-0,24%	1,90%	1,63%	1,85%	2,22%	0,61%
Luebeck, Hansestadt, Kreisfreie Stadt	1,37%	1,41%	-0,29%	-0,29%	1,41%	1,45%	1,37%	1,33%	-0,07%
Luechow-Dannenberg, Landkreis	1,31%	1,41%	-0,27%	-0,27%	1,40%	1,48%	1,13%	1,02%	-0,19%
Lueneburg, Landkreis	1,35%	1,41%	-0,29%	-0,29%	1,40%	1,45%	1,31%	1,25%	-0,11%
LUX	6,33%	6,33%	-2,14%	-2,14%	4,15%	4,15%	5,13%	5,13%	0,00%
LVA	0,30%	0,30%	-1,08%	-1,08%	-0,68%	-0,68%	-0,72%	-0,72%	0,00%
Maerkischer Kreis	1,59%	1,41%	-0,26%	-0,25%	1,71%	1,57%	1,63%	1,84%	0,34%
Maerkisch-Oderland, Landkreis	1,29%	1,41%	-0,28%	-0,28%	1,34%	1,44%	1,22%	1,09%	-0,22%
Magdeburg, Kreisfreie Stadt	1,35%	1,41%	-0,29%	-0,29%	1,39%	1,44%	1,37%	1,31%	-0,10%
Main-Kinzig-Kreis	1,42%	1,41%	-0,27%	-0,27%	1,51%	1,49%	1,42%	1,45%	0,04%
Main-Spessart, Landkreis	1,56%	1,41%	-0,25%	-0,25%	1,69%	1,57%	1,55%	1,73%	0,28%
Main-Tauber-Kreis	1,47%	1,41%	-0,26%	-0,26%	1,57%	1,53%	1,46%	1,54%	0,12%
Main-Taunus-Kreis	1,37%	1,41%	-0,30%	-0,30%	1,39%	1,42%	1,40%	1,37%	-0,07%
Mainz-Bingen, Landkreis	1,46%	1,41%	-0,26%	-0,26%	1,57%	1,53%	1,40%	1,47%	0,11%
Mainz, Kreisfreie Stadt	1,31%	1,41%	-0,31%	-0,30%	1,32%	1,40%	1,30%	1,19%	-0,18%

Mannheim, Universitaetsstadt, Kreisfreie Stadt	1,46%	1,41%	-0,27%	-0,27%	1,54%	1,50%	1,46%	1,52%	0,09%
Mansfeld-Suedharz, Landkreis	1,34%	1,41%	-0,27%	-0,27%	1,42%	1,47%	1,26%	1,19%	-0,12%
Marburg-Biedenkopf, Landkreis	1,51%	1,41%	-0,26%	-0,26%	1,62%	1,54%	1,53%	1,67%	0,21%
Mayen-Koblenz, Landkreis	1,43%	1,41%	-0,27%	-0,26%	1,52%	1,51%	1,41%	1,45%	0,05%
Meissen, Landkreis	1,42%	1,41%	-0,26%	-0,26%	1,52%	1,51%	1,36%	1,39%	0,03%
Memmingen	1,47%	1,41%	-0,26%	-0,26%	1,57%	1,52%	1,48%	1,57%	0,12%
Merzig-Wadern, Landkreis	1,35%	1,41%	-0,28%	-0,28%	1,40%	1,45%	1,32%	1,26%	-0,11%
Mettmann, Kreis	1,38%	1,41%	-0,28%	-0,28%	1,45%	1,47%	1,35%	1,34%	-0,04%
MEX	-0,18%	-0,18%	-1,47%	-1,47%	-1,73%	-1,73%	-1,65%	-1,65%	0,00%
Miesbach, Landkreis	1,34%	1,41%	-0,28%	-0,28%	1,39%	1,45%	1,29%	1,22%	-0,13%
Miltenberg, Landkreis	1,50%	1,41%	-0,26%	-0,26%	1,61%	1,54%	1,51%	1,63%	0,18%
Minden-Luebbecke, Kreis	1,42%	1,41%	-0,28%	-0,27%	1,50%	1,49%	1,38%	1,40%	0,02%
Mittelsachsen, Landkreis	1,42%	1,41%	-0,26%	-0,26%	1,52%	1,51%	1,37%	1,39%	0,03%
MLT	1,38%	1,38%	-0,07%	-0,07%	1,93%	1,93%	1,82%	1,82%	0,00%
Moenchengladbach, Kreisfreie Stadt	1,38%	1,41%	-0,29%	-0,28%	1,43%	1,46%	1,38%	1,36%	-0,05%
Muehldorf a,Inn, Landkreis	1,45%	1,41%	-0,26%	-0,26%	1,57%	1,53%	1,41%	1,47%	0,09%
Muelheim an der Ruhr, Kreisfreie Stadt	1,36%	1,41%	-0,29%	-0,28%	1,41%	1,45%	1,33%	1,28%	-0,09%
Muenchen, Landeshauptstadt	1,40%	1,41%	-0,29%	-0,28%	1,45%	1,46%	1,40%	1,40%	-0,02%
Muenchen, Landkreis	1,35%	1,41%	-0,29%	-0,29%	1,39%	1,44%	1,35%	1,30%	-0,10%
Muenster, Kreisfreie Stadt	1,34%	1,41%	-0,31%	-0,30%	1,36%	1,41%	1,36%	1,29%	-0,12%
Neckar-Odenwald-Kreis	1,46%	1,41%	-0,26%	-0,26%	1,56%	1,52%	1,44%	1,52%	0,11%
Neuburg-Schrobenhausen, Landkreis	1,44%	1,41%	-0,26%	-0,25%	1,54%	1,52%	1,41%	1,45%	0,06%
Neumarkt i,d,OPf,, Landkreis	1,44%	1,41%	-0,25%	-0,25%	1,54%	1,52%	1,44%	1,48%	0,06%
Neumuenster, Kreisfreie Stadt	1,35%	1,41%	-0,29%	-0,28%	1,40%	1,45%	1,33%	1,28%	-0,10%
Neunkirchen, Landkreis	1,44%	1,41%	-0,26%	-0,26%	1,53%	1,50%	1,47%	1,53%	0,08%
Neustadt a,d,Aisch-Bad Windsheim, Landkreis	1,36%	1,41%	-0,27%	-0,26%	1,45%	1,49%	1,25%	1,20%	-0,09%
Neustadt a,d,Waldnaab, Landkreis	1,48%	1,41%	-0,25%	-0,25%	1,61%	1,55%	1,42%	1,52%	0,14%
Neustadt an der Weinstrasse, Kreisfreie Stadt	1,29%	1,41%	-0,29%	-0,29%	1,32%	1,42%	1,25%	1,12%	-0,22%
Neu-Ulm, Landkreis	1,47%	1,41%	-0,26%	-0,26%	1,57%	1,52%	1,46%	1,55%	0,13%
Neuwied, Landkreis	1,46%	1,41%	-0,27%	-0,26%	1,55%	1,51%	1,45%	1,52%	0,10%
Nienburg (Weser), Landkreis	1,33%	1,41%	-0,27%	-0,27%	1,42%	1,48%	1,21%	1,14%	-0,13%
NLD	2,40%	2,40%	-1,57%	-1,57%	1,42%	1,42%	1,42%	1,42%	0,00%
Nordfriesland, Landkreis	1,29%	1,41%	-0,28%	-0,28%	1,35%	1,44%	1,21%	1,08%	-0,21%
Nordhausen, Kreis	1,39%	1,41%	-0,27%	-0,26%	1,48%	1,49%	1,33%	1,32%	-0,03%
Nordsachsen, Landkreis	1,28%	1,41%	-0,27%	-0,27%	1,35%	1,46%	1,15%	1,01%	-0,23%
Northeim, Landkreis	1,43%	1,41%	-0,27%	-0,26%	1,52%	1,51%	1,37%	1,40%	0,04%

Nuernberg	1,38%	1,41%	-0,29%	-0,29%	1,43%	1,45%	1,37%	1,35%	-0,05%
Nuernberger Land, Landkreis	1,48%	1,41%	-0,27%	-0,26%	1,57%	1,52%	1,49%	1,58%	0,14%
Oberallgaeu, Landkreis	1,39%	1,41%	-0,27%	-0,26%	1,47%	1,49%	1,34%	1,32%	-0,03%
Oberbergischer Kreis	1,52%	1,41%	-0,26%	-0,26%	1,63%	1,54%	1,55%	1,70%	0,23%
Oberhausen, Kreisfreie Stadt	1,45%	1,41%	-0,27%	-0,27%	1,53%	1,50%	1,47%	1,53%	0,08%
Oberhavel, Landkreis	1,41%	1,41%	-0,27%	-0,27%	1,48%	1,48%	1,39%	1,40%	0,00%
Oberspreewald-Lausitz, Landkreis	1,42%	1,41%	-0,27%	-0,26%	1,51%	1,50%	1,41%	1,44%	0,03%
Odenwaldkreis	1,48%	1,41%	-0,26%	-0,26%	1,59%	1,53%	1,49%	1,60%	0,15%
Oder-Spree, Landkreis	1,39%	1,41%	-0,26%	-0,26%	1,48%	1,49%	1,36%	1,35%	-0,02%
Offenbach am Main, Kreisfreie Stadt	1,39%	1,41%	-0,29%	-0,29%	1,44%	1,45%	1,42%	1,41%	-0,02%
Offenbach, Landkreis	1,34%	1,41%	-0,29%	-0,29%	1,37%	1,43%	1,32%	1,24%	-0,13%
Oldenburg, Landkreis	1,29%	1,41%	-0,27%	-0,27%	1,37%	1,47%	1,15%	1,03%	-0,21%
Oldenburg (Oldenburg), Kreisfreie Stadt	1,36%	1,41%	-0,30%	-0,30%	1,38%	1,42%	1,38%	1,33%	-0,09%
Olpe, Kreis	1,58%	1,41%	-0,25%	-0,25%	1,72%	1,58%	1,62%	1,83%	0,34%
Ortenaukreis	1,43%	1,41%	-0,27%	-0,27%	1,52%	1,51%	1,40%	1,44%	0,05%
Osnabrueck, Kreisfreie Stadt	1,36%	1,41%	-0,29%	-0,28%	1,41%	1,45%	1,36%	1,31%	-0,08%
Osnabrueck, Landkreis	1,41%	1,41%	-0,26%	-0,26%	1,51%	1,51%	1,33%	1,35%	0,01%
Ostalbkreis	1,55%	1,41%	-0,26%	-0,25%	1,68%	1,56%	1,57%	1,76%	0,28%
Ostallgaeu, Landkreis	1,44%	1,41%	-0,26%	-0,25%	1,54%	1,52%	1,40%	1,45%	0,06%
Osterholz, Landkreis	1,31%	1,41%	-0,29%	-0,29%	1,35%	1,43%	1,25%	1,15%	-0,18%
Osterode am Harz, Landkreis	1,51%	1,41%	-0,26%	-0,26%	1,62%	1,54%	1,52%	1,65%	0,20%
Ostholstein, Landkreis	1,32%	1,41%	-0,30%	-0,29%	1,35%	1,43%	1,29%	1,19%	-0,16%
Ostprignitz-Ruppin, Landkreis	1,32%	1,41%	-0,27%	-0,27%	1,40%	1,47%	1,20%	1,11%	-0,16%
Paderborn, Kreis	1,39%	1,41%	-0,28%	-0,27%	1,46%	1,48%	1,35%	1,33%	-0,03%
Passau	1,43%	1,41%	-0,28%	-0,27%	1,50%	1,49%	1,45%	1,49%	0,05%
Passau, Landkreis	1,42%	1,41%	-0,26%	-0,26%	1,52%	1,51%	1,35%	1,37%	0,03%
Peine, Landkreis	1,43%	1,41%	-0,27%	-0,26%	1,52%	1,51%	1,39%	1,43%	0,05%
Pfaffenhofen a,d,Ilm, Landkreis	1,54%	1,41%	-0,26%	-0,25%	1,67%	1,56%	1,53%	1,69%	0,25%
Pforzheim, Kreisfreie Stadt	1,47%	1,41%	-0,27%	-0,27%	1,55%	1,51%	1,47%	1,55%	0,12%
Pinneberg, Landkreis	1,40%	1,41%	-0,28%	-0,27%	1,47%	1,48%	1,36%	1,36%	-0,02%
Pirmasens, Kreisfreie Stadt	1,39%	1,41%	-0,28%	-0,28%	1,45%	1,47%	1,38%	1,38%	-0,02%
Ploen, Landkreis	1,37%	1,41%	-0,27%	-0,27%	1,44%	1,47%	1,32%	1,28%	-0,08%
POL	0,78%	0,78%	-1,50%	-1,50%	-0,45%	-0,45%	-0,58%	-0,58%	0,00%
Potsdam, Kreisfreie Stadt	1,33%	1,41%	-0,32%	-0,31%	1,33%	1,39%	1,35%	1,27%	-0,14%
Potsdam-Mittelmark, Landkreis	1,27%	1,41%	-0,28%	-0,28%	1,31%	1,43%	1,19%	1,03%	-0,26%
Prignitz, Landkreis	1,33%	1,41%	-0,27%	-0,27%	1,42%	1,48%	1,21%	1,13%	-0,14%
PRT	0,65%	0,65%	-0,47%	-0,47%	0,46%	0,46%	0,32%	0,32%	0,00%
Rastatt, Landkreis	1,61%	1,41%	-0,25%	-0,25%	1,74%	1,58%	1,65%	1,89%	0,38%
Ravensburg, Landkreis	1,43%	1,41%	-0,27%	-0,27%	1,52%	1,50%	1,42%	1,46%	0,06%
Recklinghausen, Kreis	1,45%	1,41%	-0,27%	-0,27%	1,53%	1,50%	1,46%	1,52%	0,09%

Regen, Landkreis	1,40%	1,41%	-0,26%	-0,26%	1,50%	1,51%	1,34%	1,34%	-0,01%
Regensburg	1,57%	1,41%	-0,26%	-0,26%	1,70%	1,56%	1,61%	1,81%	0,31%
Regensburg, Landkreis	1,39%	1,41%	-0,26%	-0,26%	1,48%	1,50%	1,33%	1,32%	-0,02%
Region Hannover, Landkreis	1,38%	1,41%	-0,29%	-0,28%	1,43%	1,46%	1,38%	1,36%	-0,04%
Remscheid, Kreisfreie Stadt	1,53%	1,41%	-0,26%	-0,26%	1,64%	1,54%	1,56%	1,72%	0,24%
Rems-Murr-Kreis	1,47%	1,41%	-0,27%	-0,26%	1,56%	1,52%	1,48%	1,56%	0,12%
Rendsburg-Eckernfoerde, Landkreis	1,25%	1,41%	-0,30%	-0,29%	1,27%	1,40%	1,18%	1,01%	-0,29%
Reutlingen, Landkreis	1,49%	1,41%	-0,26%	-0,26%	1,59%	1,53%	1,51%	1,62%	0,17%
Rhein-Erft-Kreis	1,39%	1,41%	-0,28%	-0,28%	1,46%	1,48%	1,36%	1,34%	-0,03%
Rheingau-Taunus-Kreis	1,42%	1,41%	-0,28%	-0,27%	1,49%	1,48%	1,42%	1,44%	0,02%
Rhein-Hunsrueck-Kreis	1,37%	1,41%	-0,27%	-0,26%	1,46%	1,49%	1,32%	1,29%	-0,06%
Rheinisch-Bergischer Kreis	1,37%	1,41%	-0,29%	-0,28%	1,42%	1,45%	1,38%	1,35%	-0,06%
Rhein-Kreis Neuss	1,43%	1,41%	-0,28%	-0,27%	1,50%	1,49%	1,42%	1,46%	0,05%
Rhein-Lahn-Kreis	1,41%	1,41%	-0,27%	-0,27%	1,49%	1,49%	1,39%	1,40%	0,01%
Rhein-Neckar-Kreis	1,34%	1,41%	-0,29%	-0,28%	1,39%	1,44%	1,30%	1,23%	-0,12%
Rhein-Pfalz-Kreis	1,27%	1,41%	-0,27%	-0,27%	1,33%	1,45%	1,14%	0,98%	-0,26%
Rhein-Sieg-Kreis	1,39%	1,41%	-0,28%	-0,28%	1,44%	1,46%	1,39%	1,37%	-0,04%
Rhoen-Grabfeld, Landkreis	1,43%	1,41%	-0,27%	-0,26%	1,52%	1,51%	1,37%	1,40%	0,04%
Rosenheim	1,36%	1,41%	-0,29%	-0,29%	1,40%	1,44%	1,37%	1,32%	-0,08%
Rosenheim, Landkreis	1,39%	1,41%	-0,27%	-0,27%	1,47%	1,49%	1,35%	1,35%	-0,02%
Rotenburg (Wuemme), Landkreis	1,27%	1,41%	-0,28%	-0,28%	1,32%	1,44%	1,15%	0,99%	-0,26%
Roth, Landkreis	1,40%	1,41%	-0,27%	-0,27%	1,48%	1,49%	1,36%	1,36%	-0,01%
Rottal-Inn, Landkreis	1,38%	1,41%	-0,26%	-0,25%	1,48%	1,51%	1,32%	1,30%	-0,04%
Rottweil, Landkreis	1,54%	1,41%	-0,26%	-0,25%	1,66%	1,56%	1,55%	1,71%	0,25%
ROU	0,29%	0,29%	-1,03%	-1,03%	-0,67%	-0,67%	-0,73%	-0,73%	0,00%
RoW	-0,06%	-0,06%	-0,96%	-0,96%	-1,08%	-1,08%	-1,02%	-1,02%	0,00%
RUS	-0,09%	-0,09%	-0,97%	-0,97%	-1,00%	-1,00%	-1,03%	-1,04%	0,00%
Saale-Holzland-Kreis	1,35%	1,41%	-0,27%	-0,26%	1,44%	1,49%	1,27%	1,21%	-0,10%
Saalekreis	1,49%	1,41%	-0,25%	-0,25%	1,61%	1,55%	1,44%	1,54%	0,16%
Saale-Orla-Kreis	1,45%	1,41%	-0,25%	-0,25%	1,57%	1,54%	1,36%	1,42%	0,08%
Saalfeld-Rudolstadt, Kreis	1,48%	1,41%	-0,26%	-0,26%	1,59%	1,53%	1,46%	1,56%	0,14%
Saarbruecken, Regionalverband	1,43%	1,41%	-0,28%	-0,28%	1,50%	1,48%	1,43%	1,46%	0,04%
Saarlouis, Landkreis	1,52%	1,41%	-0,26%	-0,26%	1,62%	1,54%	1,54%	1,68%	0,21%
Saarpfalz-Kreis	1,53%	1,41%	-0,26%	-0,26%	1,64%	1,54%	1,55%	1,70%	0,23%
Saechsische Schweiz-Osterzgebirge, Landkreis	1,38%	1,41%	-0,27%	-0,26%	1,46%	1,49%	1,34%	1,31%	-0,05%
Salzgitter, Kreisfreie Stadt	1,67%	1,41%	-0,25%	-0,25%	1,82%	1,61%	1,75%	2,06%	0,49%
Salzlandkreis	1,43%	1,41%	-0,26%	-0,26%	1,53%	1,52%	1,37%	1,40%	0,04%
Schaumburg, Landkreis	1,41%	1,41%	-0,27%	-0,27%	1,48%	1,49%	1,39%	1,40%	0,00%
Schleswig-Flensburg, Landkreis	1,26%	1,41%	-0,29%	-0,28%	1,30%	1,42%	1,15%	0,98%	-0,28%
Schmalkalden-Meiningen, Kreis	1,47%	1,41%	-0,26%	-0,26%	1,58%	1,53%	1,46%	1,55%	0,13%
Schwabach	1,44%	1,41%	-0,28%	-0,27%	1,51%	1,49%	1,44%	1,49%	0,06%
Schwaebisch Hall, Landkreis	1,47%	1,41%	-0,26%	-0,26%	1,58%	1,53%	1,44%	1,53%	0,12%

Schwalm-Eder-Kreis	1,38%	1,41%	-0,28%	-0,27%	1,46%	1,48%	1,33%	1,31%	-0,04%
Schwandorf, Landkreis	1,38%	1,41%	-0,27%	-0,27%	1,46%	1,49%	1,28%	1,26%	-0,05%
Schwarzwald-Baar-Kreis	1,49%	1,41%	-0,26%	-0,26%	1,60%	1,53%	1,50%	1,61%	0,17%
Schweinfurt	1,67%	1,41%	-0,25%	-0,25%	1,82%	1,61%	1,75%	2,05%	0,49%
Schweinfurt, Landkreis	1,40%	1,41%	-0,27%	-0,27%	1,48%	1,50%	1,33%	1,33%	-0,02%
Segeberg, Landkreis	1,37%	1,41%	-0,28%	-0,28%	1,44%	1,47%	1,34%	1,31%	-0,06%
Siegen-Wittgenstein, Kreis	1,52%	1,41%	-0,26%	-0,26%	1,63%	1,54%	1,54%	1,68%	0,22%
Sigmaringen, Landkreis	1,46%	1,41%	-0,26%	-0,26%	1,56%	1,53%	1,43%	1,49%	0,10%
Soemmerda, Kreis	1,37%	1,41%	-0,26%	-0,26%	1,48%	1,51%	1,26%	1,23%	-0,06%
Soest, Kreis	1,47%	1,41%	-0,27%	-0,26%	1,57%	1,53%	1,44%	1,52%	0,12%
Solingen, Kreisfreie Stadt	1,47%	1,41%	-0,27%	-0,27%	1,56%	1,51%	1,50%	1,59%	0,13%
Sonneberg, Kreis	1,55%	1,41%	-0,25%	-0,25%	1,68%	1,57%	1,56%	1,74%	0,27%
Speyer, Kreisfreie Stadt	1,45%	1,41%	-0,28%	-0,27%	1,53%	1,50%	1,46%	1,53%	0,09%
Spree-Neisse, Landkreis	1,65%	1,41%	-0,24%	-0,24%	1,81%	1,61%	1,71%	2,00%	0,46%
Stade, Landkreis	1,32%	1,41%	-0,27%	-0,27%	1,39%	1,46%	1,22%	1,12%	-0,16%
Staedteregion Aachen (einschl, Stadt Aachen)	1,41%	1,41%	-0,28%	-0,28%	1,48%	1,48%	1,42%	1,44%	0,02%
Starnberg, Landkreis	1,45%	1,41%	-0,28%	-0,27%	1,52%	1,49%	1,47%	1,53%	0,08%
Steinburg, Landkreis	1,43%	1,41%	-0,27%	-0,27%	1,53%	1,51%	1,39%	1,42%	0,05%
Steinfurt, Kreis	1,38%	1,41%	-0,27%	-0,27%	1,46%	1,48%	1,31%	1,28%	-0,05%
Stendal, Landkreis	1,28%	1,41%	-0,27%	-0,27%	1,36%	1,46%	1,14%	1,00%	-0,23%
Stormarn, Landkreis	1,38%	1,41%	-0,28%	-0,28%	1,44%	1,47%	1,35%	1,32%	-0,05%
Straubing	1,35%	1,41%	-0,29%	-0,29%	1,39%	1,44%	1,31%	1,25%	-0,11%
Straubing-Bogen, Landkreis	1,39%	1,41%	-0,25%	-0,25%	1,51%	1,52%	1,29%	1,29%	-0,02%
Stuttgart, Landeshauptstadt, Kreisfreie Stadt	1,45%	1,41%	-0,27%	-0,27%	1,53%	1,50%	1,48%	1,54%	0,09%
St, Wendel, Landkreis	1,49%	1,41%	-0,26%	-0,26%	1,60%	1,53%	1,51%	1,62%	0,17%
Suedliche Weinstrasse, Landkreis	1,34%	1,41%	-0,27%	-0,27%	1,43%	1,49%	1,19%	1,12%	-0,13%
Suedwestpfalz, Landkreis	1,34%	1,41%	-0,28%	-0,27%	1,41%	1,46%	1,27%	1,20%	-0,13%
Suhl, krsfr, Stadt	1,36%	1,41%	-0,29%	-0,29%	1,39%	1,44%	1,38%	1,33%	-0,08%
SVK	0,41%	0,41%	-0,86%	-0,86%	-0,30%	-0,30%	-0,36%	-0,36%	0,00%
SVN	0,67%	0,67%	-0,96%	-0,96%	-0,06%	-0,06%	-0,12%	-0,12%	0,00%
SWE	1,57%	1,57%	-0,61%	-0,61%	1,40%	1,39%	1,22%	1,22%	0,00%
Teltow-Flaeming, Landkreis	1,41%	1,41%	-0,27%	-0,26%	1,50%	1,50%	1,35%	1,36%	0,00%
Tirschenreuth, Landkreis	1,44%	1,41%	-0,25%	-0,25%	1,57%	1,54%	1,35%	1,40%	0,07%
Traunstein, Landkreis	1,47%	1,41%	-0,26%	-0,26%	1,59%	1,54%	1,44%	1,53%	0,13%
Trier, Kreisfreie Stadt	1,38%	1,41%	-0,29%	-0,29%	1,43%	1,45%	1,38%	1,36%	-0,04%
Trier-Saarburg, Landkreis	1,37%	1,41%	-0,27%	-0,27%	1,45%	1,48%	1,30%	1,26%	-0,07%
Tuebingen, Landkreis	1,43%	1,41%	-0,28%	-0,27%	1,51%	1,49%	1,45%	1,49%	0,06%
TUR	0,03%	0,03%	-0,91%	-0,91%	-0,97%	-0,97%	-0,90%	-0,90%	0,00%
Tuttlingen, Landkreis	1,64%	1,41%	-0,25%	-0,25%	1,79%	1,60%	1,70%	1,97%	0,44%
TWN	-0,20%	-0,20%	-1,09%	-1,09%	-1,21%	-1,21%	-1,24%	-1,24%	0,00%
Uckermark, Landkreis	1,39%	1,41%	-0,27%	-0,26%	1,49%	1,51%	1,28%	1,27%	-0,03%
Uelzen, Landkreis	1,27%	1,41%	-0,29%	-0,28%	1,32%	1,44%	1,13%	0,97%	-0,27%
Ulm, Universitaetsstadt, Kreisfreie Stadt	1,39%	1,41%	-0,28%	-0,28%	1,45%	1,47%	1,36%	1,34%	-0,04%

Unna, Kreis	1,43%	1,41%	-0,28%	-0,27%	1,51%	1,49%	1,42%	1,46%	0,05%
Unstrut-Hainich-Kreis	1,36%	1,41%	-0,27%	-0,26%	1,44%	1,48%	1,28%	1,23%	-0,09%
Unterallgaeu, Landkreis	1,46%	1,41%	-0,25%	-0,25%	1,58%	1,54%	1,42%	1,49%	0,11%
USA	1,58%	1,58%	-0,21%	-0,21%	1,96%	1,96%	2,03%	2,03%	0,00%
Vechta, Landkreis	1,37%	1,41%	-0,26%	-0,26%	1,48%	1,51%	1,23%	1,20%	-0,06%
Verden, Landkreis	1,39%	1,41%	-0,27%	-0,26%	1,48%	1,49%	1,34%	1,33%	-0,02%
Viersen, Kreis	1,35%	1,41%	-0,28%	-0,28%	1,41%	1,46%	1,29%	1,23%	-0,11%
Vogelsbergkreis	1,39%	1,41%	-0,27%	-0,27%	1,47%	1,49%	1,33%	1,32%	-0,03%
Vogtlandkreis	1,41%	1,41%	-0,27%	-0,26%	1,50%	1,50%	1,39%	1,41%	0,02%
Vulkaneifel, Landkreis	1,38%	1,41%	-0,27%	-0,26%	1,47%	1,50%	1,30%	1,28%	-0,04%
Waldeck-Frankenberg, Landkreis	1,43%	1,41%	-0,27%	-0,26%	1,53%	1,51%	1,39%	1,43%	0,05%
Waldshut, Landkreis	1,46%	1,41%	-0,26%	-0,26%	1,55%	1,52%	1,45%	1,51%	0,10%
Warendorf, Kreis	1,44%	1,41%	-0,26%	-0,26%	1,55%	1,53%	1,36%	1,41%	0,07%
Wartburgkreis	1,53%	1,41%	-0,25%	-0,25%	1,66%	1,56%	1,52%	1,67%	0,24%
Weiden i,d,OPf,	1,30%	1,41%	-0,30%	-0,29%	1,32%	1,41%	1,26%	1,13%	-0,21%
Weilheim-Schongau, Landkreis	1,51%	1,41%	-0,26%	-0,25%	1,63%	1,55%	1,50%	1,63%	0,20%
Weimarer Land, Kreis	1,35%	1,41%	-0,26%	-0,26%	1,45%	1,50%	1,24%	1,19%	-0,10%
Weimar, krsfr, Stadt	1,37%	1,41%	-0,29%	-0,29%	1,41%	1,44%	1,40%	1,37%	-0,06%
Weissenburg-Gunzenhausen, Landkreis	1,45%	1,41%	-0,26%	-0,26%	1,56%	1,53%	1,40%	1,46%	0,09%
Werra-Meissner-Kreis	1,38%	1,41%	-0,27%	-0,27%	1,46%	1,48%	1,36%	1,34%	-0,04%
Wesel, Kreis	1,39%	1,41%	-0,28%	-0,27%	1,47%	1,48%	1,36%	1,36%	-0,02%
Wesermarsch, Landkreis	1,52%	1,41%	-0,26%	-0,25%	1,66%	1,57%	1,46%	1,60%	0,22%
Westerwaldkreis	1,36%	1,41%	-0,27%	-0,27%	1,43%	1,47%	1,32%	1,28%	-0,08%
Wetteraukreis	1,41%	1,41%	-0,28%	-0,27%	1,47%	1,48%	1,41%	1,41%	0,00%
Wiesbaden, Landeshauptstadt, Kreisfreie Stadt	1,39%	1,41%	-0,30%	-0,29%	1,43%	1,44%	1,42%	1,42%	-0,02%
Wilhelmshaven, Kreisfreie Stadt	1,41%	1,41%	-0,28%	-0,28%	1,47%	1,47%	1,43%	1,45%	0,02%
Wittenberg, Landkreis	1,43%	1,41%	-0,26%	-0,25%	1,54%	1,53%	1,35%	1,38%	0,05%
Wittmund, Landkreis	1,25%	1,41%	-0,29%	-0,29%	1,29%	1,42%	1,14%	0,97%	-0,29%
Wolfenbuettel, Landkreis	1,41%	1,41%	-0,27%	-0,26%	1,50%	1,51%	1,35%	1,36%	0,01%
Wolfsburg, Kreisfreie Stadt	1,77%	1,41%	-0,25%	-0,25%	1,95%	1,65%	1,90%	2,32%	0,67%
Worms, Kreisfreie Stadt	1,46%	1,41%	-0,27%	-0,27%	1,55%	1,52%	1,42%	1,49%	0,10%
Wuerzburg	1,33%	1,41%	-0,31%	-0,30%	1,34%	1,41%	1,32%	1,24%	-0,15%
Wuerzburg, Landkreis	1,32%	1,41%	-0,28%	-0,28%	1,37%	1,45%	1,25%	1,15%	-0,17%
Wunsiedel i,Fichtelgebirge, Landkreis	1,49%	1,41%	-0,26%	-0,26%	1,60%	1,53%	1,48%	1,59%	0,16%
Wuppertal, Kreisfreie Stadt	1,48%	1,41%	-0,27%	-0,27%	1,57%	1,51%	1,50%	1,60%	0,15%
Zollernalbkreis	1,49%	1,41%	-0,26%	-0,26%	1,60%	1,53%	1,50%	1,61%	0,17%
Zweibruecken, Kreisfreie Stadt	1,50%	1,41%	-0,27%	-0,26%	1,60%	1,53%	1,50%	1,62%	0,17%
Zwickau, Landkreis	1,45%	1,41%	-0,26%	-0,26%	1,55%	1,52%	1,44%	1,51%	0,09%