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Going Dutch: monetary policy in the Netherlands during the interwar gold standard, 1925–1936

SUPPLEMENTARY MATERIAL

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Appendix A

Besides employing interest rate policy (described in Section III) and capital controls (Section IV), De Nederlandsche Bank (DNB) had three additional policy instruments in its arsenal: (1) managing the domestic money supply; (2) manipulating its short-term credit facility; and (3) providing "forward guidance". These policy instruments were primarily used to stimulate domestic consumption, provide Dutch firms with sufficient financial flexibility to weather the global economic crisis, and to quell any uncertainty creeping into the Dutch economy being driven by the country's exchange rate policy.

(1) As per its charter, DNB was the country's sole bank of issue, enjoying the monopoly on the minting of coin and the printing of paper money. Figure A1 reveals a precipitous decline in the money supply in the lead up to, and immediately following, re-joining the gold standard in 1925; by 1927 the amount of money in circulation was just 75 per cent of what it had been in 1920. Then, in 1931, central bankers dramatically changed course: DNB expanded the money supply, returning to levels last seen a decade before, during the 1920s banking crisis. The Dutch currency became a safe haven in this time of monetary instability and uncertainty. There was a sharp increase in gold reserves on DNB's balance sheet from May 1931 (Figure 5, main text). But DNB failed to increase the money supply to the same degree as the increase in gold; while DNB's gold reserves continued to expand, the money supply fell all the way through to 1936; DNB was partly sterilising its gold influx.

(2) DNB officials used two policy instruments to provide the Dutch economy with liquidity: (a) providing *beleeningen*, a short-term repo (Lombard) facility where borrowers had to put up securities such as government bonds as collateral; and (b) granting access to its *disconto*, an alternative short-term discount credit facility offered at the policy rate with negotiable instruments (bills of exchange) used as collateral. Figure A2 depicts DNB's lending portfolio between 1920 and 1939, and suggests the central

Figure A1. *Money in circulation in the Netherlands (monthly frequency), 1920-1939*

Note: Depicted is an index of bank notes and coins in circulation (M0). Vertical lines denote the Netherlands' entry (April 1925), the UK's departure (September 1931) and the Netherland's departure (September 1936) from the gold standard.

Source: Own calculation, using DNB (1920-1939).

bank attempted to offer policy relief. DNB used its *disconto* to provide liquidity to markets around flashpoints, such as the UK's departure in 1931 and the US in 1933. Liquidity provision was inversely related to its reserve politics; decreases in DNB's gold reserves correspond to significant increases in its lending. There was a substantial increase in the use of DNB's repo lending facility following the dollar's devaluation. Given the drop in discounting business, we think that DNB became more risk averse in its credit provision. This shift away from accepting negotiable instruments as collateral and towards government debt continued after the Netherlands eventually left gold in 1936.

That DNB became more risk averse is also evidenced by how it dealt with its foreign bills investments. Figure A3 shows the evolution of DNB's foreign bills of exchange holdings. These bills were accepted and sold regularly prior to re-joining the standard as part of DNB's usual business model; they were an important source of profit. Then, after the Dutch re-joined the gold standard, the monthly volatility in the quantity of bills on DNB's balance sheet increased by a factor of ten. Central bankers were actively using their position in the exchange market to offset and affect the money supply. DNB quickly reduced its foreign bills holdings after the UK left in 1931 as they constituted a significant

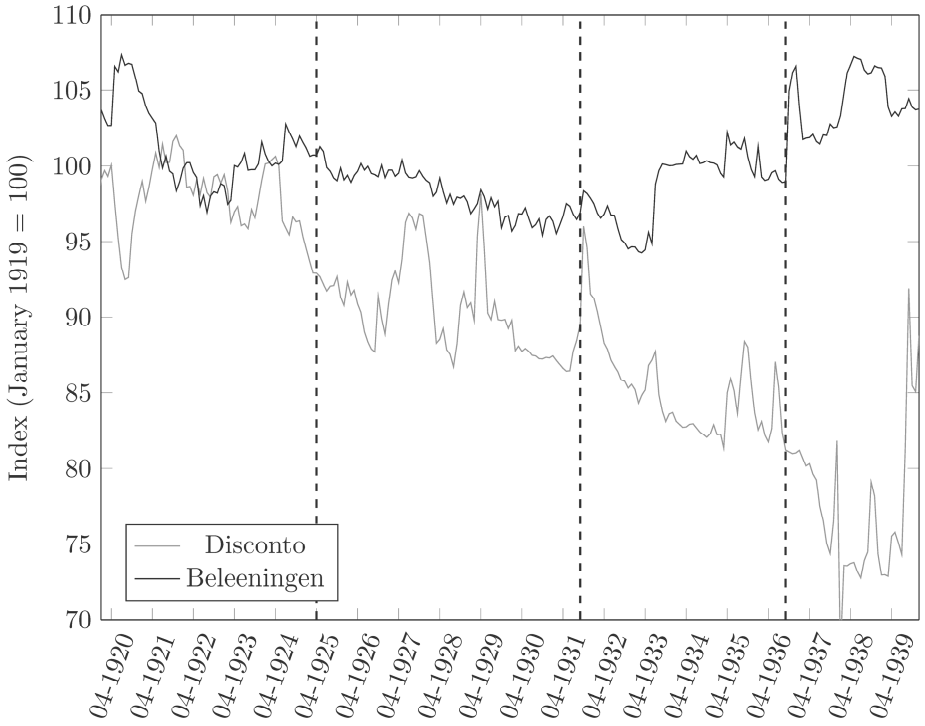

Figure A2. *Lending practices of DNB (monthly frequency), 1920-1939*

Note: Depicted are indices of the quantity of short-term and secured lending to private institutions originated by DNB. Vertical lines denote the Netherlands' entry (April 1925), the UK's departure (September 1931) and the Netherland's departure from the gold standard in September 1936.

Source: Own calculation, using DNB (1920-1939).

exchange rate risk. The central bank then withdrew from this market altogether in 1933, after the US left the gold standard.

(3) Besides sitting on various government advisory committees through which they could frustrate fiscal policy initiatives, DNB officials had one more "non-standard" monetary policy tool at their disposal: forward guidance. Communicating about plans for future monetary policy decisions is a way in which central bankers can influence the expectations of consumers and firms. DNB used it principally to quell any domestic unrest that might affect stock prices or consumption propensity. Interest in central bank communication has increased recently as central bankers have used it more systematically to enhance the effectiveness of their monetary policy (Moessner *et al.* 2017). Communication about monetary policy, from central bankers and political leaders, was used infrequently during the interwar period. The overriding aim of such communication was instead to assure the public the gold standard would be maintained, no matter what. Typically, there was no explanation accompanying changes in interest rates; changes were reported as a matter-of-fact in a few short lines in among newspapers' other news-in-brief items.

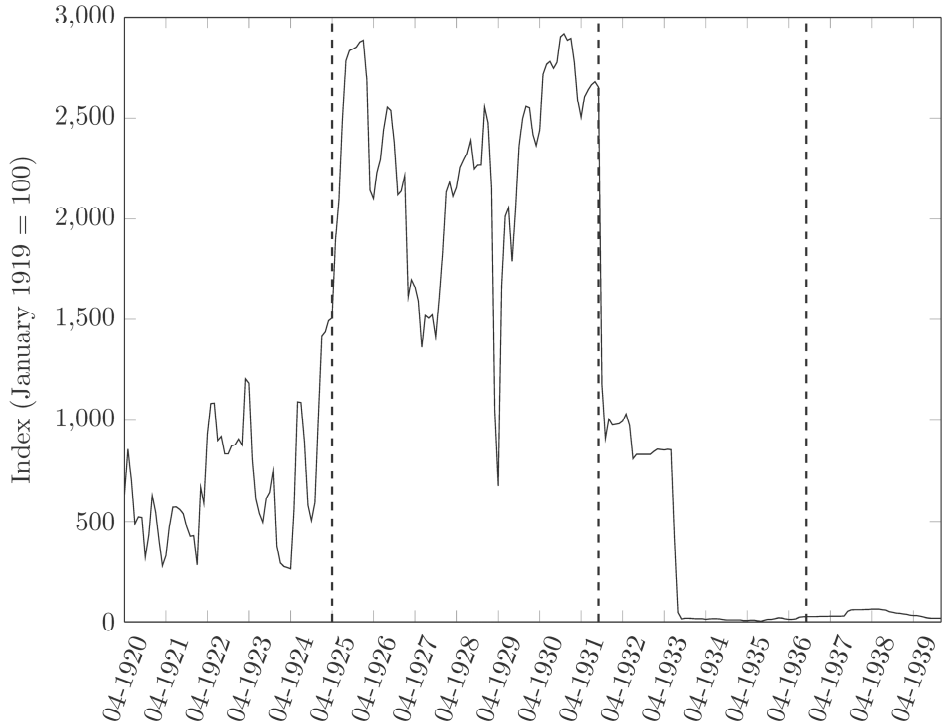

Figure A3. *Foreign bills on DNB's balance sheet (monthly frequency), 1920-1939*

Note: Depicted is DNB's holdings of foreign bills of exchange. Vertical lines denote the Netherland's entry (April 1925), the UK's departure (September 1931) and the Netherlands' departure from the gold standard in September 1931.

Source: Own calculation, using DNB (1920-1939).

Central bank communication intensified when the Netherlands' gold policy became open to question during a series of crisis episodes in the 1930s. When the UK left in 1931, the Netherlands' political leaders and central bankers used communication as a tool to reassure markets the guilder-gold fixed exchange rate would continue to be their core policy position. As far as we can discern, the media briefings of central banker "policy implementers" was always consistent with those of their political "policy setters"; they presented a united front.

On the political side, Colijn is quoted as declaring the position of the guilder is 'safe' (*De Telegraaf*, 27 September 1931), and gold reserves are 'stronger than ever' (*Provinciale Geledersche en Nijmeegsche Courant*, 28 September 1931). And on the central banker side, Trip is quoted as blaming speculation against the guilder on the foreign press (*Het Vaderland*, 17 July 1931), while DNB officials briefed journalists that the public had no reason to worry about the position of the guilder despite an increase in interest rates (*De Limburger*, 30 September 1931). Trip even went as far as saying 'when price and quality are similar, Dutch products should be preferred over foreign products' (*Provinciale Overijsselsche en Zwolsche Courant*, 11 March 1933: 9). Further communications of this kind are found

when the US leaves the gold standard in 1933,[1] at the time of the government's budget in 1934,[2] and when Belgium is forced off gold in 1935.[3]

Interestingly, central bankers had to move prime minister Colijn towards communicating the guilder's departure from gold in 1936. Colijn was initially reluctant to pass comment – he was still reeling from having to quit gold following the decision of his French and Swiss counterparts. But he was eventually persuaded by DNB leaders that communication would help to quell financial market unrest (De Vries 1989). Colijn then explained his government's change in policy direction, in some detail, in a national radio address which was reprinted widely.

Overall, we find Dutch policymakers had significant scope for monetary policy autonomy with regards to managing their adherence to gold. Most importantly, DNB had the means to offset policy changes made by other central banks, both inside and outside of the gold bloc. Aside from changing its policy rate, from about May 1931 DNB also engaged in gold and foreign exchange transactions, open market operations and short-term lending to sustain the guilder-gold exchange rate at pre-war parity and provide much needed financial stability.

[1] On the political side, Colijn is quoted as saying 'why should we go off the gold standard when our banknotes are almost 100% covered?' (authors' translation, *Frisch Dagblad*, 26 September 1933). And on the central banker side, Trip briefs journalists no special measures are necessary in light of the US departure from gold (*De Telegraaf*, 3 June 1933), and 'the technical position of our medium of exchange does not give rise to any of the problems which have occurred in other countries' (authors' translation, *Leeuwwarder Courant*, 3 July 1933).

[2] Confusion by some commentators in the media about Minister of Finance Pieter Oud's views on devaluation forced him to clarify his position – he remained vehemently opposed – by directly briefing influential media outlets (see, e.g., *De Tijd*, 16 November 1934).

[3] On the political side, Colijn argues devaluation is not on the agenda as it would adversely affect international trade and financial stability (*Het Nieuws van den Dag*, 16 February 1935). And on the central banker side, DNB declares 'no change will be made in monetary policy' (authors' translation, *De Tijd*, 29 March 1935), and DNB still has 'numerous measures available for the defence of the guilder' (authors' translation, *De Indische Courant*, 4 June 1935).

Appendix B

The literature on the interwar gold standard in the Netherlands focuses on whether the country's exchange rate policy was to blame for its poor economic performance. In his professorial inaugural lecture, Van Zanden (1996) characterises the work of Keesing (1947) and Klein (1973) – previously the two giants in this literature – as being a debate on the culpability of exchange rate policy. Van Zanden attributes to Keesing the view that the long duration of the Great Depression was down to the gold standard, and to Klein the alternative that structural weaknesses were to blame – the country's small size, open character and dependence on agriculture.

Van Zanden (1996) argues the Dutch economy was structurally relatively well-equipped to absorb the economic shocks of the early 1930s. He rejects the hypothesis that small open economies are inherently less able to adapt, and argues the country was anyway sufficiently rich and diversified to substitute imported for domestic production. The fact this did not occur, then, is for Van Zanden down to policy decisions. He argues the austerity policies of the 1930s that followed from continued gold standard adherence had a scarring effect on the Dutch economy.

We reconsider these conclusions by tracking the performance of the Dutch economy relative to that of the other countries in our analysis. In so doing, we link exchange rate policy choices with the country's economic performance. We ask: what if the Netherlands' central bankers would have followed a different path and left the gold standard in 1931 (with the UK), 1933 (with the US) or 1935 (with Belgium)? The purpose of this comparison is to examine DNB's role in the underperformance of the Dutch economy during the 1930s. Like Van Zanden (1996), our evidence points to Keesing's (1947) argument that government policy choices were at least partially culpable for the Dutch experience of the Great Depression.

Figure B1 depicts the Netherlands' economic activity relative to a set of "peer" countries (UK, US, France and Belgium) using monthly data compiled by Albers (2018) from contemporary sources. The Netherlands' economic performance relative to the UK declined by approximately 15 per cent following sterling's devaluation. The Dutch outperformed only the US over the period 1925–1936. Dutch economic activity did not recover in the later period relative to France and Belgium. The Netherlands' record versus early leavers is mixed; the country performed worse than some early leavers, but also worse than others in the gold bloc rump.

Figure B2 depicts the development of Dutch wholesale prices relative to the same set of countries. The Netherlands suffered significantly stronger deflationary pressures throughout the gold standard. It was the Dutch government's stated objective to suppress wages to deflate the economy and support the currency; in that sense, policymakers achieved their policy objective. But this did not aid in the economic recovery. Taken together, the data suggest the key cost of the gold standard was persistently falling prices.

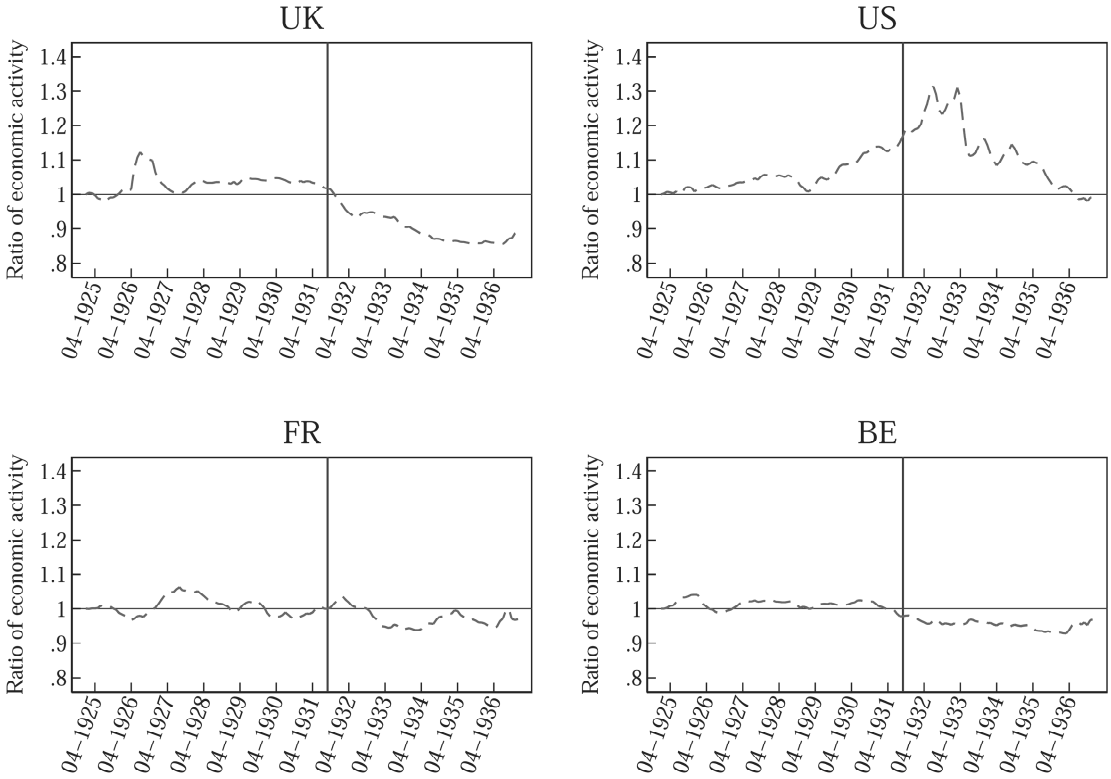

Figure B1. *Economic activity of the Netherlands relative to peer countries (monthly frequency), 1920-1936*

Note: Depicted are the ratios of indexed economic activity of the Netherlands to the indexed economic activity of peer countries. The vertical lines denote the UK's departure from the gold standard in September 1931.

Source: Own calculation, using Albers (2018).

Figure B3 compares the development of trade balances. The Netherlands' trade balance became relatively more volatile after the UK left gold, and the Dutch economy significantly underperformed in terms of its ability to maintain a trade surplus relative to the countries which left the gold standard earlier. The Dutch were never able to export more than they were importing. The gold standard did not help the Netherlands to insulate itself from the increasingly protectionist beggar-thy-neighbour trade policies of its neighbours.

Figure B4 shows the development of Dutch bond yields alongside those of its peers. It shows bond markets responded strongly to the UK leaving the gold standard; bond yields on average increased significantly across the board in 1931. As DNB continued to hoard gold, Dutch bond yields dropped relative to developments in Belgium and France. But the continued demand for guilder-denominated debt suggests investors neither judged Dutch policymakers to be mismanaging their monetary policy, nor that markets expected that the Dutch state would default on its debt. The Netherlands faced

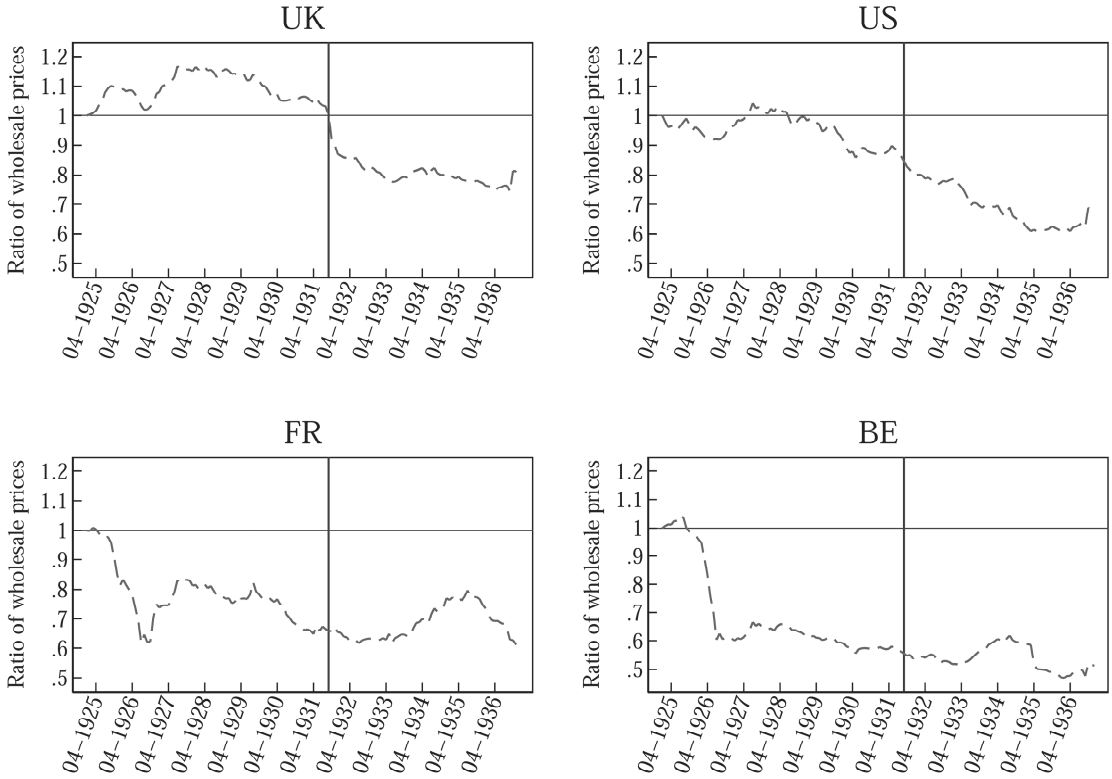

Figure B2. *Wholesale prices in the Netherlands relative to peer countries (monthly frequency), 1920-1936*

Note: Depicted are the ratios of indexed wholesale prices in the Netherlands to the indexed wholesale prices of peer countries. The vertical lines denote the UK's departure from the gold standard in September 1931.

Source: Own calculation, using Albers (2018).

relatively low bond yields, which meant the Dutch government enjoyed a relatively low cost of borrowing. But rather than exploiting the low borrowing costs, the Dutch government reduced its spending by more than 10 per cent between 1930 and 1936 (Figure 12, main text) – consistent with the narrative presented by Van Zanden (1996). We conclude that although the Dutch economy could not outperform the early leavers of the standard, it was nevertheless able to keep the confidence of international financial markets. Policymakers prioritised financial stability over economic growth.

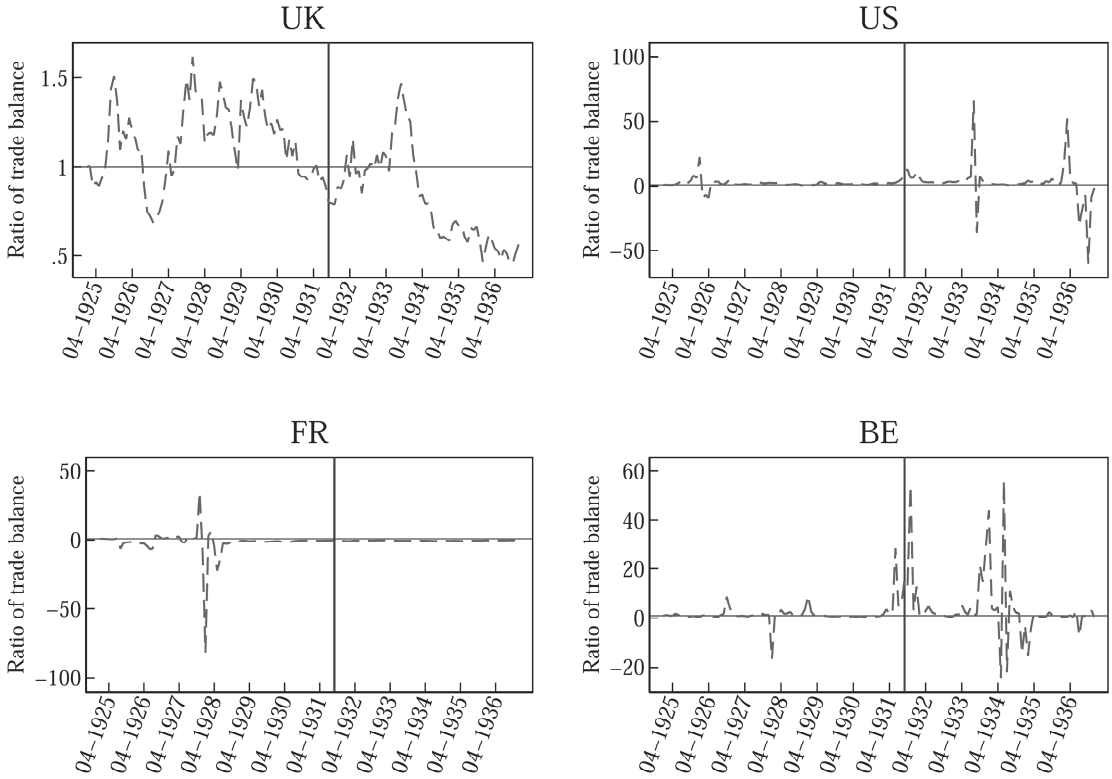

Figure B3. *Trade balance of the Netherlands relative to peer countries (monthly frequency), 1920-1936*

Note: Depicted are the ratios of indexed trade balances of the Netherlands to the indexed trade balances of peer countries. The vertical lines denote the UK's departure from the gold standard in September 1931.

Source: Own calculation, using Albers (2018).

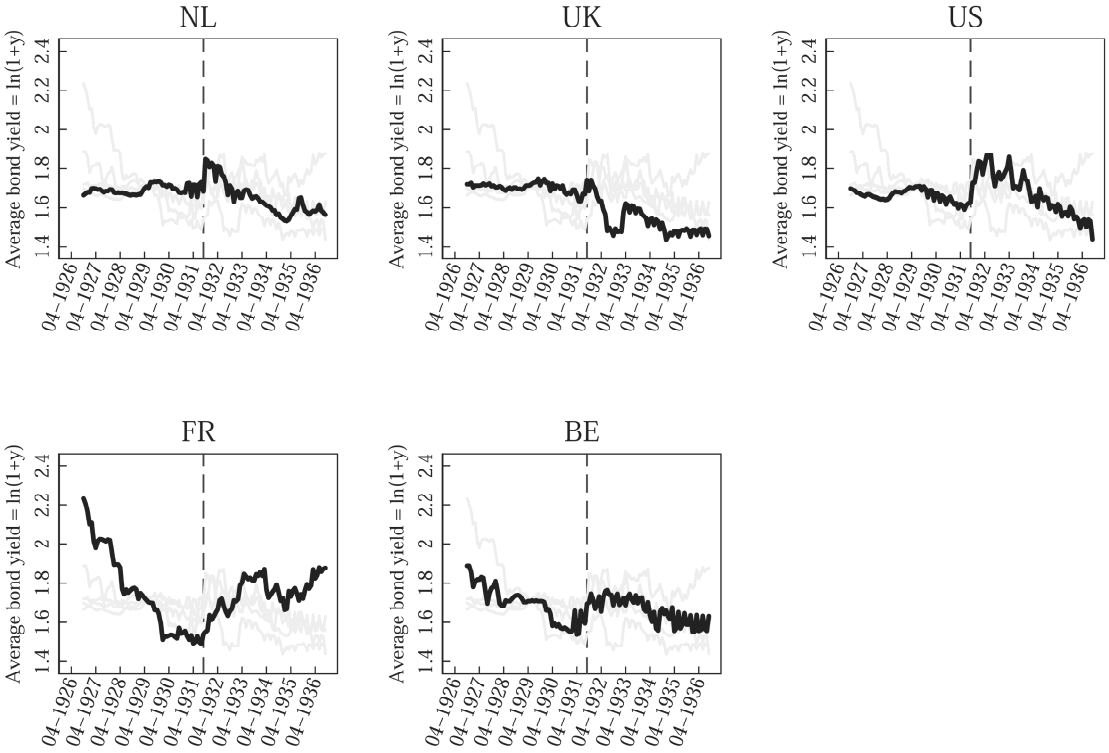

Figure B4. *Average yields of bonds in selected countries (monthly frequency), 1926-1936*

Note: Depicted are the average bond yields (ln(1+y)) of a collection of bonds (as described in text) traded in the respective countries. The vertical lines denote the UK's departure from the gold standard in September 1931.

Source: Own calculation, using data from Center for Financial Stability, compiled from LoN Statistical Yearbook (various issues, 1930/31-1942/44). For the Netherlands we use: unspecified perpetual, redeemable bond, 4% prime bond, government bond, two series of miscellaneous public and private bond baskets, miscellaneous public bonds, 2.5/3% perpetual bond, 3/3.5% 1938 state lone. For the UK: 2.5% perpetual bond, 3.5% 1932 war loan, basket of industrial loans. For the US: a basket of Liberty and Treasury bonds, 10 year Treasury bond, a basket of all Treasury bonds not due for more than 12 years, partly tax-exempt bonds, taxable bonds not due for more than 15 year, municipal bonds, a basket of utility bonds, a basket of railway bonds and a basket of industrial bonds. For France: a combination of 3% perpetual and 4.5% 1932 loan, 4% 1918 bond, 4.5% 1932 Tranche A, a basket of miscellaneous government and private bonds (two significant revisions in 1929, and 1939). All yields are expressed in the form ln(1 + r). For all countries we average the different yields to have an extended series.

Appendix C

To facilitate the construction of a counterfactual, we estimate a vector autoregression (VAR) using a combination of Dutch domestic factors and global factors. Table C1 highlights the factors included in our analysis and the source materials used to construct the relevant time series. All factors are reported at a monthly frequency and have been log-transformed. Forecasts are represented as index figures, where our base period is April 1925. Figures C1 and C2 report the time series of our domestic and global factors. All data obtained from DNB's weekly balance sheets are aggregated to a monthly frequency.

We estimate a VAR following Greene (2008). The model can be written as:

$$y_t = k + A_1 y_{t-1} + \ ... + A_p y_{t-p} + \ \epsilon_t \qquad \text{(C1)}$$

where y_t is an $n\ x\ 1$ vector of endogenous variables, pertaining to the factors described in Table C1, and k is a vector of constants. A_p is then a $k\ x\ k$ matrix of parameters capturing the relationship between individual endogenous factors. For our baseline model this implies y_t consists of eight domestic factors and four global factors. For ϵ_t we assume that $E(\epsilon_t) = 0$, and the covariance matrix is $E(\epsilon_t \epsilon_t')$. This means we assume our model is correctly specified and contains no errors related to our endogenous variables. Our baseline model uses $p = 3$; we used the Akaike Information Criterion to select a three-month lag structure for our endogenous variables.

We then estimate our models for the period April 1925 to May 1931. We stop our estimations in May 1931 – well before the UK leaves the standard – because after this date DNB significantly revised its policy on gold, as discussed in the main text. Then using stable parameters, included in A, we calculate our out-of-sample forecasts for June 1931 to September 1936.[4] We ask: what would have happened to the Dutch economy if Dutch policymakers would have left gold early alongside the UK, fixed the guilder to the pound and kept gold reserves stable?

Our forecasts are calculated using parametrically bootstrapped standard errors for which the confidence bounds are estimated via simulation in which the changes come from a multivariate normal distribution. For the bounds we rely on centiles of the bootstrap set. To ensure that our forecasts remain within the observed bounds, all estimations use 500 replications. In total, we estimate six different models, of which we only discuss our baseline model in the main text.

Figures C3 to C8 show the forecast outcomes for our variables of interest. Table C2 shows the average deviation of forecasted versus observed levels for our variables of interest. Additionally, we

[4] We assume a lower-triangular matrix that imposes an ordering on the variables. Changes to any one equation affect the variables later in the ordering contemporaneously, but each variable is contemporaneously unaffected by the changes to variables earlier in the system.

Table C1. *Domestic and global factors for VARs*

	Baseline	Robustness					Source
Model		*Reduced*	*Closed*	*US policy*	*BoE gold*	*Credit*	
Number of factors	12	12	10	13	13	13	
Number of lags	3	2	3	3	3	3	
Domestic factors							
Policy rate	√	√	√	√	√	√	DNB (2011)
Gold reserves	√	√	√	√	√	√	DNB (1920-1939)
Economic activity	√	√	√	√	√	√	Albers (2018)
Inflation	√	√	√	√	√	√	Albers (2018)
Money supply	√	√	√	√	√	√	DNB (1920-1939)
Unemployment	√	√	√	√	√	√	Albers (2018)
Total exports	√	√	x	√	√	√	Albers (2018)
Total imports	√	√	x	√	√	√	Albers (2018)
Lending	x	x	x	x	x	√	DNB (1920-1939)
Global factors							
UK exchange rate	√	√	√	√	√	√	Bohlin (2010)
UK economic activity	√	√	√	√	√	√	Albers (2018)
UK policy rate	√	√	√	√	√	√	Hills *et al.* (2010)
US policy rate	x	x	x	√	x	x	Board of Governors (2020)
Global gold price	√	√	√	√	√	√	MacroTrends LLC
BoE gold reserves	x	x	x	x	√	x	Huang and Thomas (2016)

Note: Domestic factors defined as: Policy rate is the key policy rate set by DNB as reported in Figure 3 and calculated asln(1+ r), based on DNB (2011). Gold reserves are defined as the stock of gold coin and bullion held by DNB. Economic activity is defined as calculated by Albers (2018). Inflation is defined as wholesale price levels, as calculated by Albers (2018). Money supply is defined as bank notes and coins in circulation based on DNB (1920-1939). Unemployment is defined as the total number of unemployed individuals as calculated by Albers (2018). Total exports and total imports are defined as in Albers (2018). Lending is the total of credit provided via the short-term repo (Lombard) facilities with required collateral based on DNB (1920-1939). Global factors defined as: UK exchange rate is the value of the pound relative to the value of the guilder as per our own calculation using data provided by Bohlin (2010). UK Economic activity is defined as calculated by Albers (2018). UK policy rate is the discount rate set by BoE, obtained from Hills *et al.* (2015). US policy rate is the discount rate set by the FED as obtained from Board of Governors (2020). Global gold price is defined as the monthly inflation adjust gold price denoted in US dollars, provided by MacroTrends LLC. BoE gold reserves is defined as the amount of gold reserves held by the BoE Issue department, as obtained from Huang and Thomas (2016).

report relative root mean squared errors (RRMSE) to capture the scale invariant forecasting errors. This signals the accuracy of each of the VAR models for our endogenous variables. We find all our models perform relatively well. While the RRMSE for our baseline model might be somewhat higher than the reduced lag or closed model, we calculate that these models provide a less accurate reflection of the Dutch economy. This is because the Dutch economy needed more than two months to return to equilibrium following a foreign exogenous shock, and the Dutch economy is traditionally characterised as a small and very open economy.

Table C2. *Average deviation from forecasted levels after May 1931*

Model	*Baseline*		*Reduced*		*Closed*	
Number of factors	12		12		10	
Number of lags	3		2		3	
	Deviation	RRMSE	Deviation	RRMSE	Deviation	RRMSE
Economic Activity	6.6%	0.7%	8.8%	0.4%	7.9%	0.3%
Inflation	80.4%	2.7%	58.8%	1.5%	27.3%	1.0%
Unemployment	-74.4%	3.6%	-73.0%	1.5%	-51.7%	1.2%
Gold reserves	-46.7%	0.2%	-44.1%	0.1%	-45.2%	0.2%
Model	*US policy*		*BoE gold*		*Credit*	
Number of factors	13		13		13	
Number of lags	3		3		3	
	Deviation	RRMSE	Deviation	RRMSE	Deviation	RRMSE
Economic Activity	10.9%	1.0%	8.5%	0.4%	7.1%	0.7%
Inflation	105.0%	10.7%	60.6%	3.8%	83.1%	7.0%
Unemployment	-81.6%	17.3%	-73.4%	4.9%	-76.3%	9.5%
Gold reserves	-44.1%	0.2%	-44.3%	0.2%	-46.2%	0.2%

Note: All variables of interest are defined as in Table C1. Deviation is calculated as $\left(\frac{\sum_{May\ 1931}^{September\ 1936} \widehat{y_t}}{n}\right) - \left(\frac{\sum_{May\ 1931}^{September\ 1936} y_t}{n}\right)$, where $\widehat{y_t}$ is the forecasted value of our variables of interest and y_t is the observed (i.e. actual) value of our variables of interest. Reported deviations are reported as normalized effect sizes. RRMSE is then the relative root mean squared error of our estimated forecasts over the period May 1931-September 1936.

What follows is a short reading example for Table C2. Compared to the observed outcomes for the Dutch economy, our baseline model suggests that Dutch economic activity would have been on average 6.6 per cent higher if Dutch policymakers would have chosen to leave gold early. This figure lies between 6.6 and 10.9 per cent across our models. Our variables of interest are forecasted with relatively high accuracy (low RRMSE) across our different model specifications, with the notable exception of the *US policy* specification. This is consistent with our previous findings that US monetary policy was not on the minds of Dutch central bankers when they made their decisions.

Had the Netherlands devalued the guilder in 1931 and maintained its unrestricted trade policies, this would have also affected the country's relative trading position; there may have been: (a) a negative effect on the export competitiveness of Dutch trading partners; and (b) an increase in now-cheaper Dutch exports. We do not model these effects because their respective sizes are not obvious; they depend on the importance of the Dutch economy, the Netherlands' current account balance, and the dynamics of international trade specialisation.

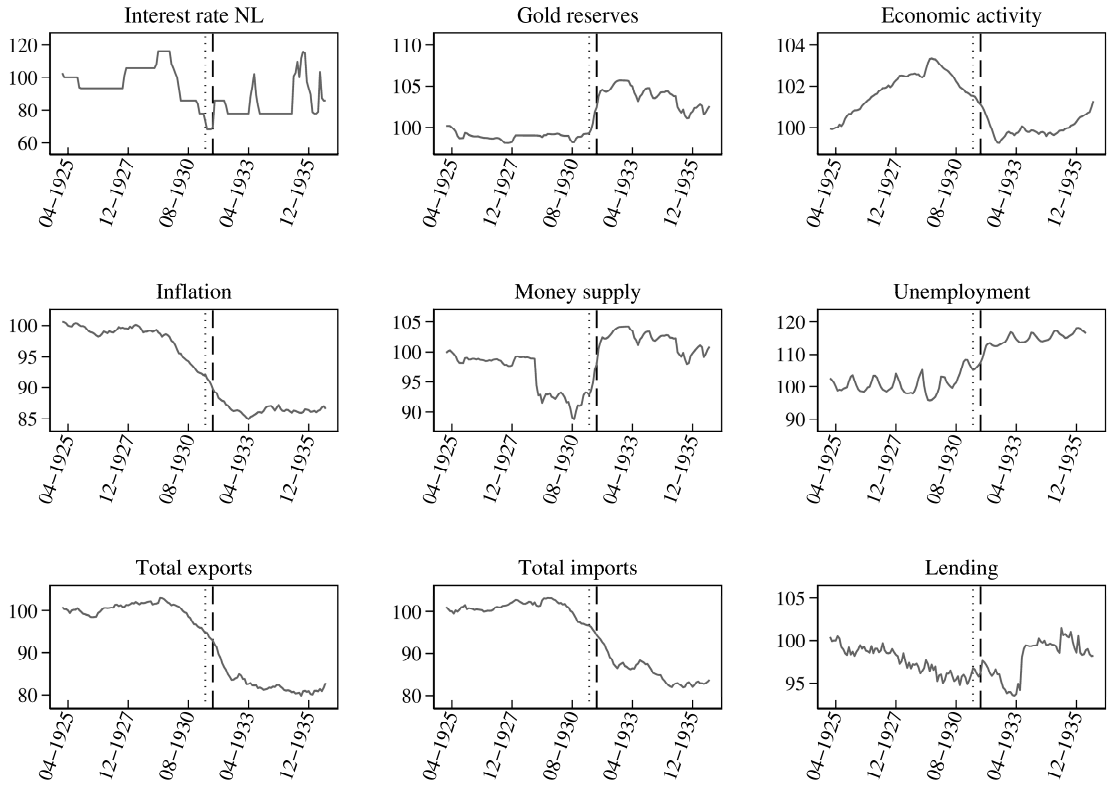

Figure C1. *Domestic factors included in VAR models (monthly frequency), 1920-1939*

Note: Depicted are the time series of the factors pertaining to the evolution of the Dutch domestic economy. The vertical lines denote DNB's gold policy change in May 1931 (dotted line) and the UK's departure from the gold standard in September 1931 (dashed line). All factors are log-transformed and depicted as indices with the reference date of April 1925.

Source: Data sources, variable definitions and model specification are provided in Table C1.

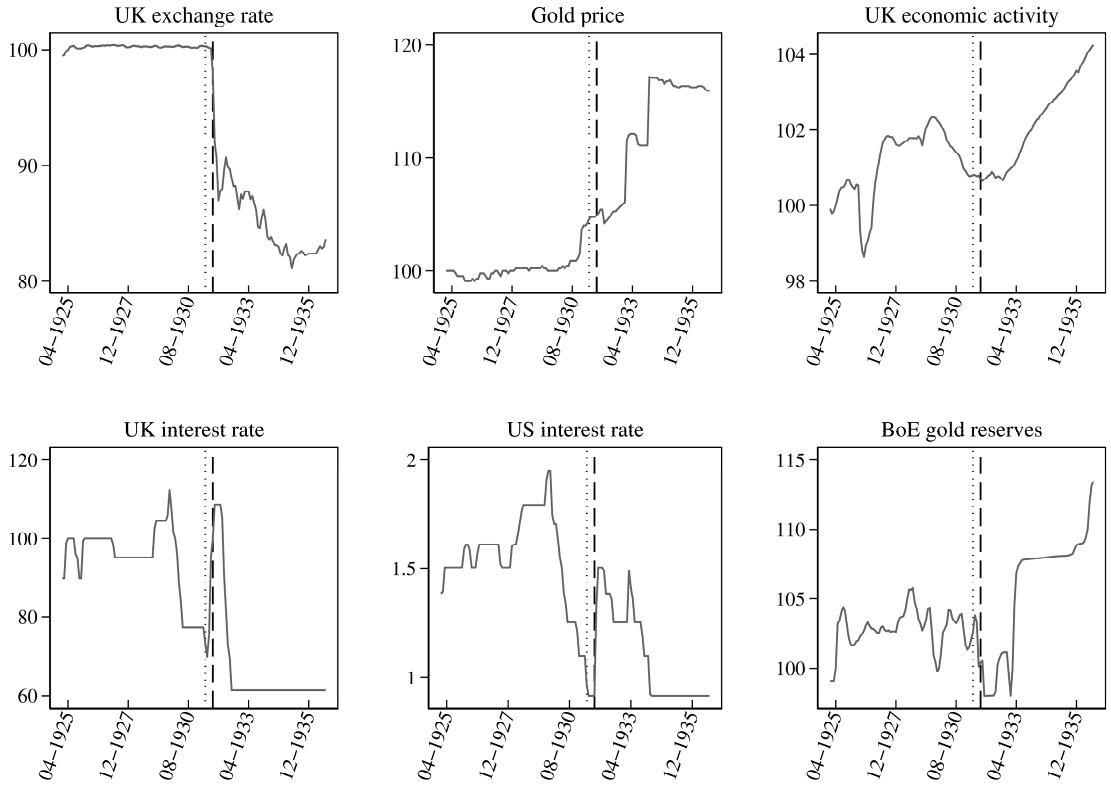

Figure C2. *Global factors included in VAR models (monthly frequency), 1920-1939*

Note: Depicted are the time series of external and global factors affecting the Dutch domestic economy. The vertical lines denote DNB's gold policy change in May 1931 (dotted line) and the UK's departure from the gold standard in September 1931 (dashed line). All factors are log-transformed and depicted as indices with the reference date of April 1925.

Source: Data sources, variable definitions and model specification are provided in Table C1.

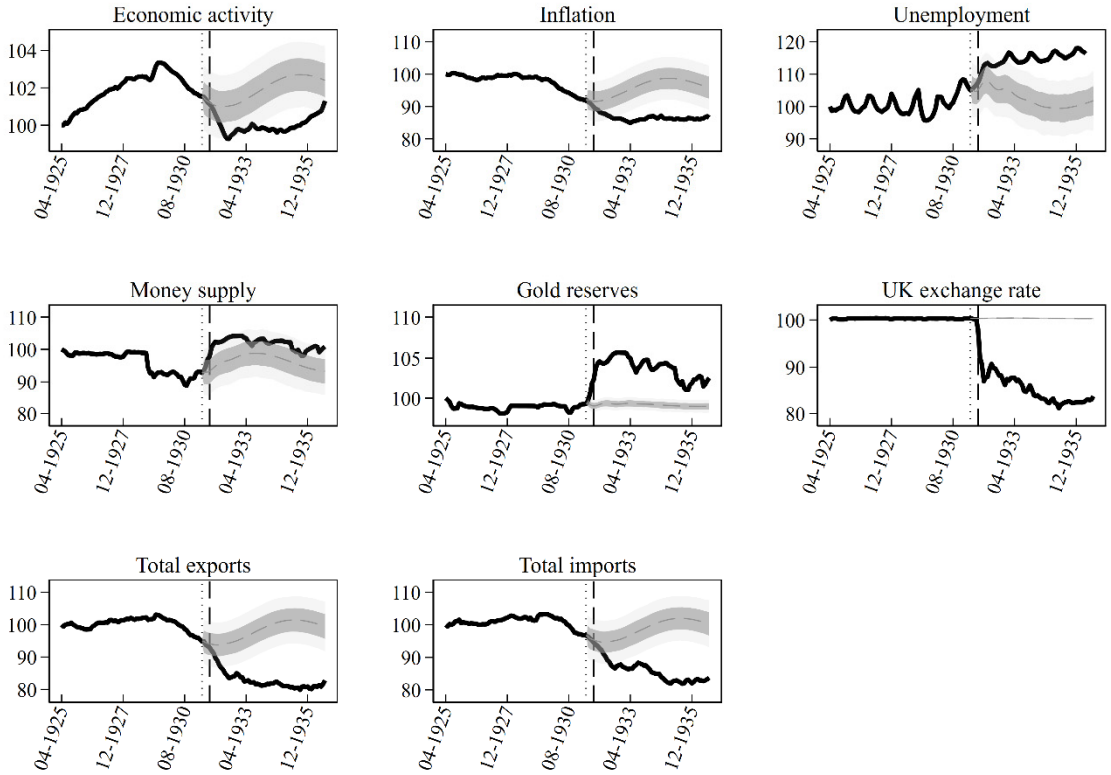

Figure C3. *Alternative VAR counterfactual, specification with two-month lag (monthly frequency), 1925-1936*

Note: Depicted are the observed outcomes (solid line) and counterfactual results (dashed line). The vertical lines denote DNB's gold policy change in May 1931 (dotted line) and the UK's departure from the gold standard in September 1931 (dashed line). We report two sets of confidence intervals: 95% (dark grey) and 68% (light grey). VAR estimation is described in Section V and Appendix C.

Source: Data sources, variable definitions and model specification are provided in Table C1. All factors are log-transformed and depicted as indices with the reference date of April 1925.

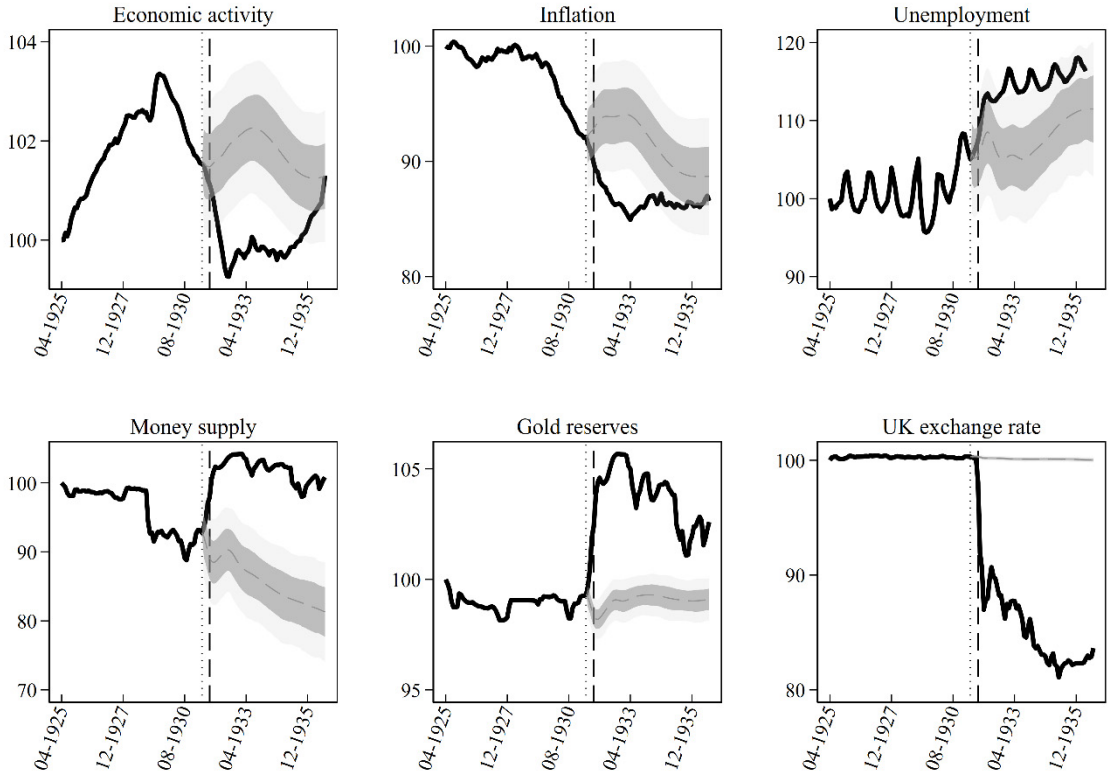

Figure C4. *Alternative VAR counterfactual, specification with closed economy assumption (monthly frequency), 1925-1936*

Note: Depicted are the observed outcomes (solid line) and counterfactual results (dashed line). The vertical lines denote DNB's gold policy change in May 1931 (dotted line) and the UK's departure from the gold standard in September 1931 (dashed line). We report two sets of confidence intervals: 95% (dark grey) and 68% (light grey). VAR estimation is described in Section V and Appendix C.

Source: Data sources, variable definitions and model specification are provided in Table C1. All factors are log-transformed and depicted as indices with the reference date of April 1925.

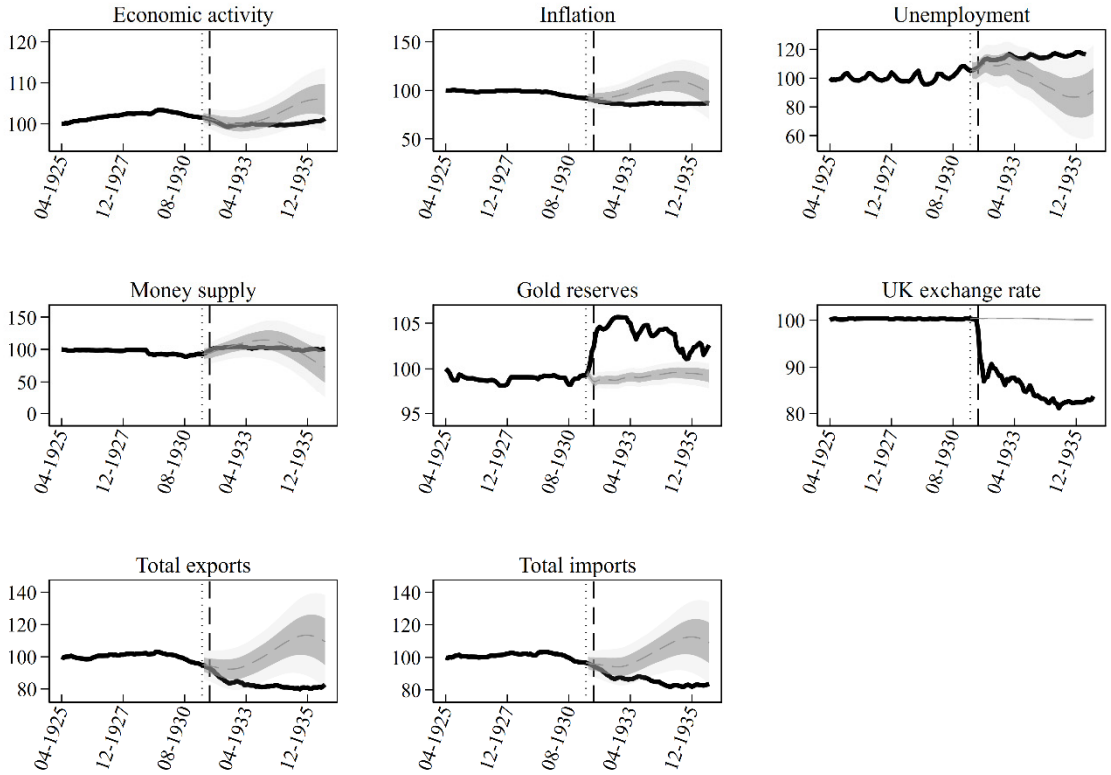

Figure C5. *Alternative VAR counterfactual, specification including US interest rate (monthly frequency), 1925-1936*

Note: Depicted are the observed outcomes (solid line) and counterfactual results (dashed line). The vertical lines denote DNB's gold policy change in May 1931 (dotted line) and the UK's departure from the gold standard in September 1931 (dashed line). We report two sets of confidence intervals: 95% (dark grey) and 68% (light grey). VAR estimation is described in Section V and Appendix C.

Source: Data sources, variable definitions and model specification are provided in Table C1. All factors are log-transformed and depicted as indices with the reference date of April 1925.

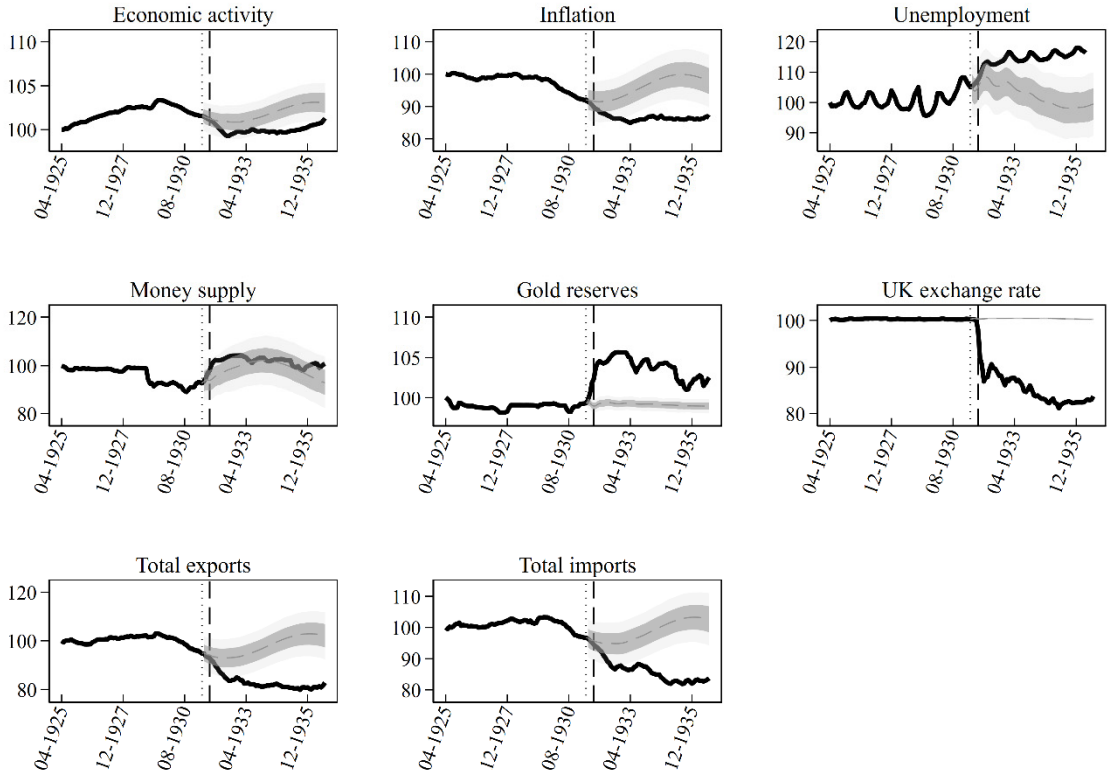

Figure C6. *Alternative VAR counterfactual, specification including BoE gold reserves (monthly frequency), 1925-1936*

Note: Depicted are the observed outcomes (solid line) and counterfactual results (dashed line). The vertical lines denote DNB's gold policy change in May 1931 (dotted line) and the UK's departure from the gold standard in September 1931 (dashed line). We report two sets of confidence intervals: 95% (dark grey) and 68% (light grey). VAR estimation is described in Section V and Appendix C.

Source: Data sources, variable definitions and model specification are provided in Table C1. All factors are log-transformed and depicted as indices with the reference date of April 1925.

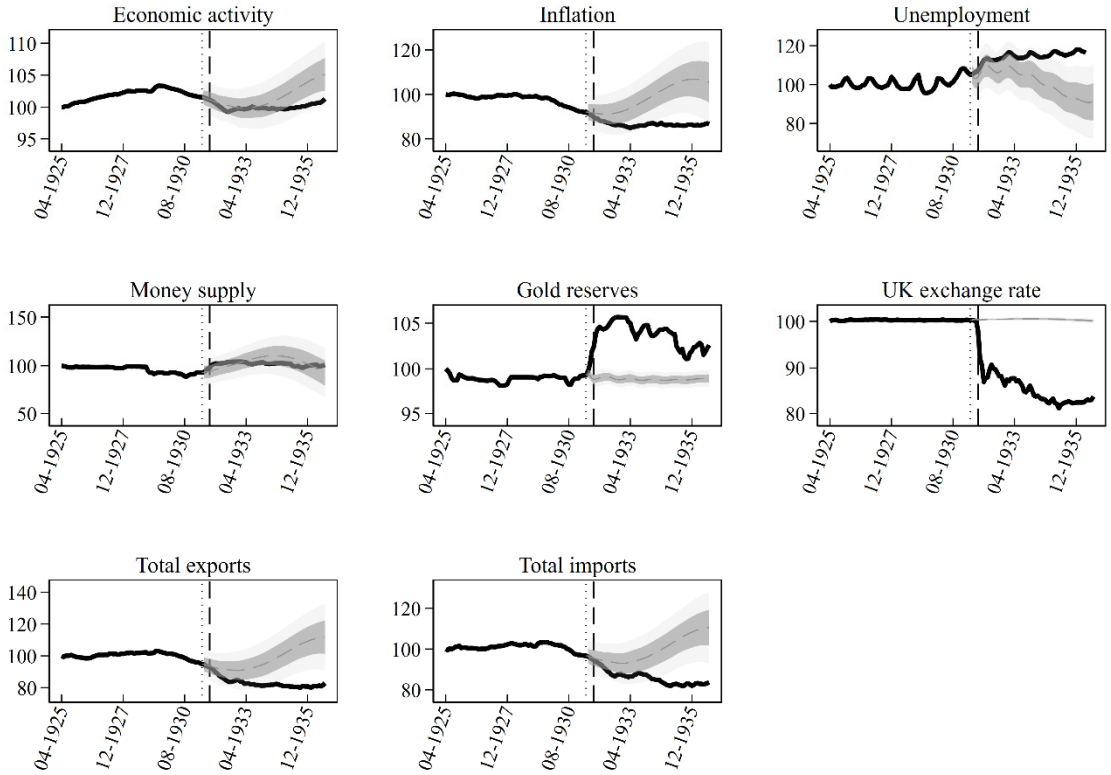

Figure C7. *Alternative VAR counterfactual, specification including DNB lombard lending (monthly frequency), 1925-1936*

Note: Depicted are the observed outcomes (solid line) and counterfactual results (dashed line). The vertical lines denote DNB's gold policy change in May 1931 (dotted line) and the UK's departure from the gold standard in September 1931 (dashed line). We report two sets of confidence intervals: 95% (dark grey) and 68% (light grey). VAR estimation is described in Section V and Appendix C.

Source: Data sources, variable definitions and model specification are provided in Table C1. All factors are log-transformed and depicted as indices with the reference date of April 1925.

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